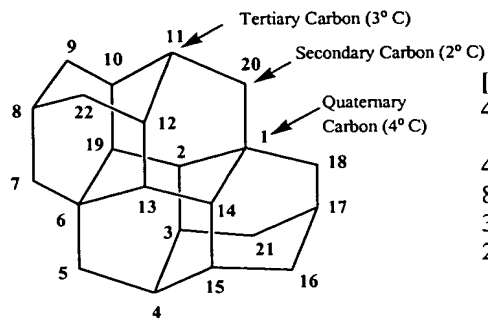
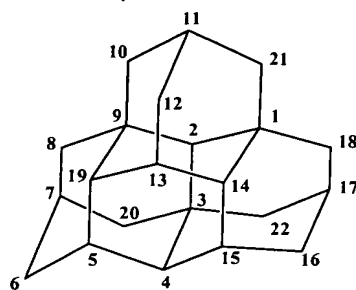


**FIG. 1****[121] Tetramantane (*anti*-)**

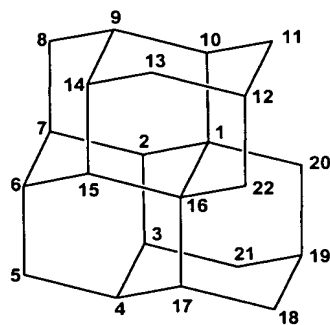
4 non-equivalent tertiary carbons:

4, 11 (equivalent)  
8, 17 (equivalent)  
3, 10, 12, 15 (equivalent)  
2, 13, 14, 19 (equivalent)

**[122] Tetramantane (*iso*-)**

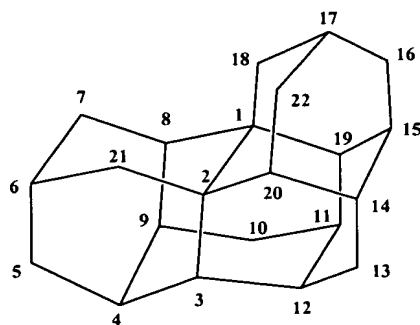
4 non-equivalent tertiary carbons:

2  
4, 14, 19 (equivalent)  
5, 13, 15 (equivalent)  
7, 11, 17 (equivalent)

**[123]A Tetramantane (*skew*- A)**

6 non-equivalent tertiary carbons:

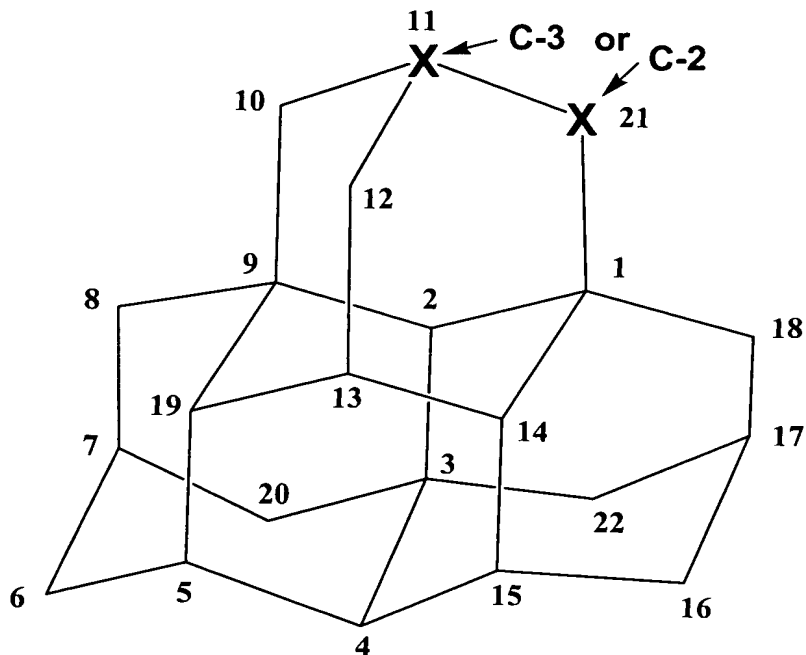
6, 7 (equivalent)  
4, 9 (equivalent)  
3, 14 (equivalent)  
2, 15 (equivalent)  
10, 17 (equivalent)  
12, 19 (equivalent)

**[123]B Tetramantane (*skew*- B)**

6 non-equivalent tertiary carbons:

6, 17 (equivalent)  
4, 15 (equivalent)  
11, 12 (equivalent)  
3, 19 (equivalent)  
9, 14 (equivalent)  
8, 20 (equivalent)

FIG. 2



X		Heat of Formation (Kcal/mol)
<i>iso</i> -Tetramantane		-52.75
O	C-2	-78.57
S	C-2	-35.22
Se	C-2	-31.26
B	C-2	-18.40
	C-3	-9.32
N	C-2	-34.28
	C-3	-26.94
P	C-2	-16.19
	C-3	-15.85
As	C-2	-20.68
	C-3	-18.63

FIG. 3

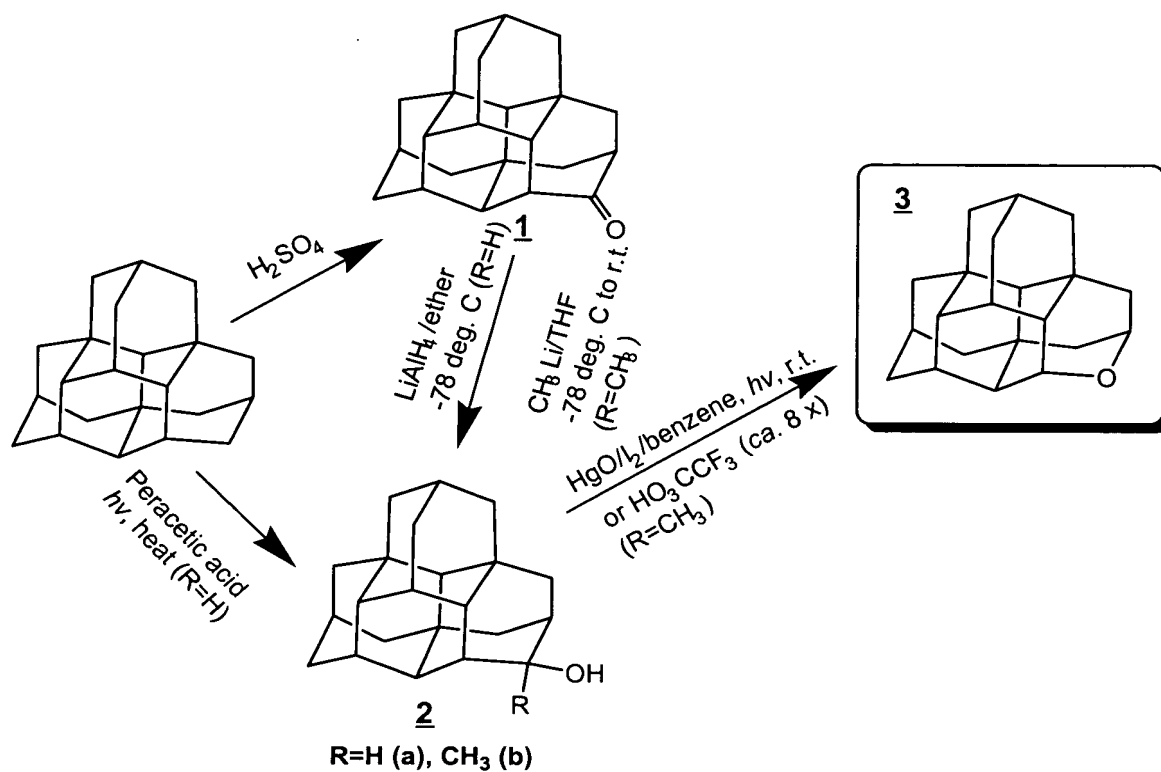


FIG. 4

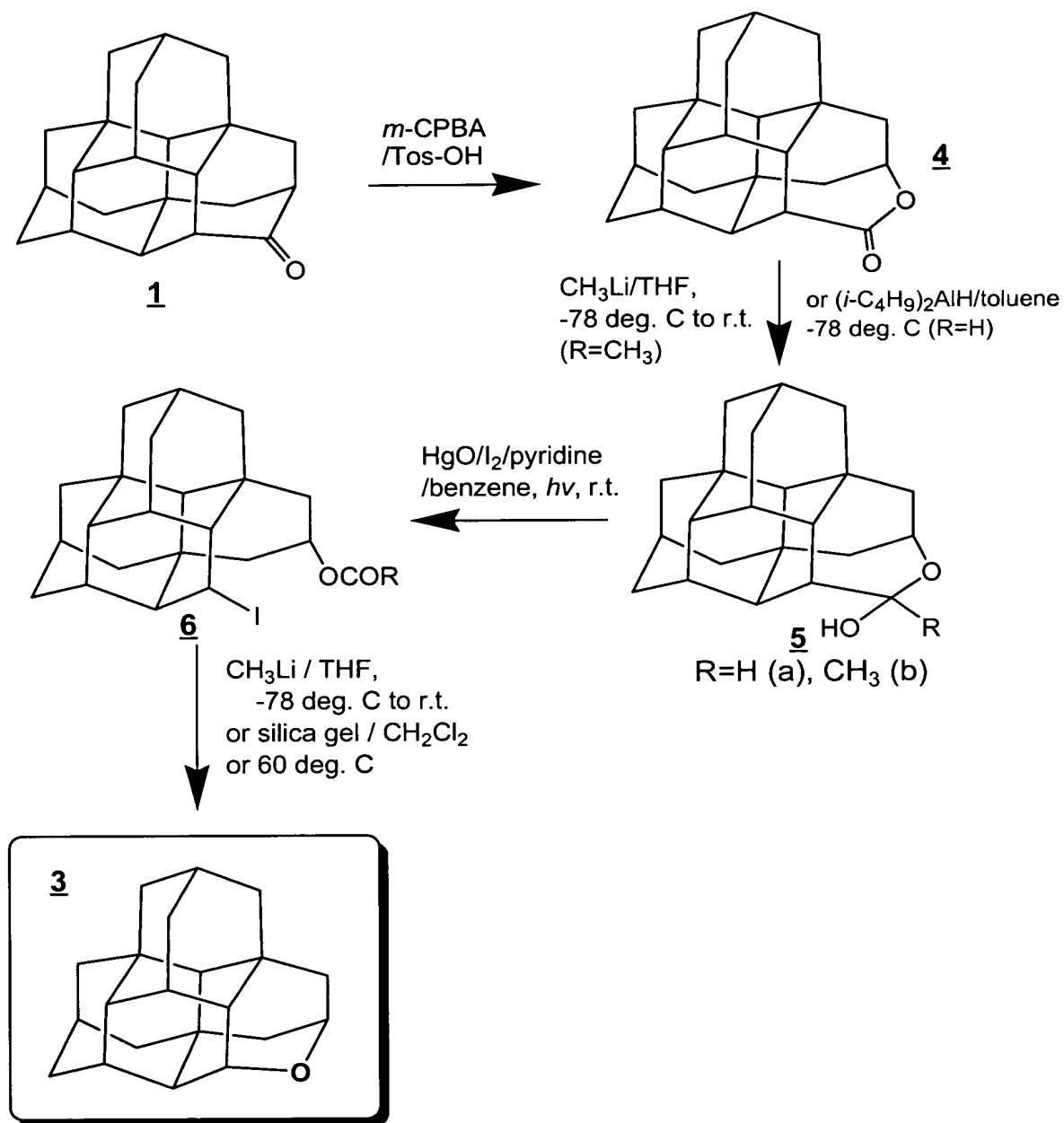
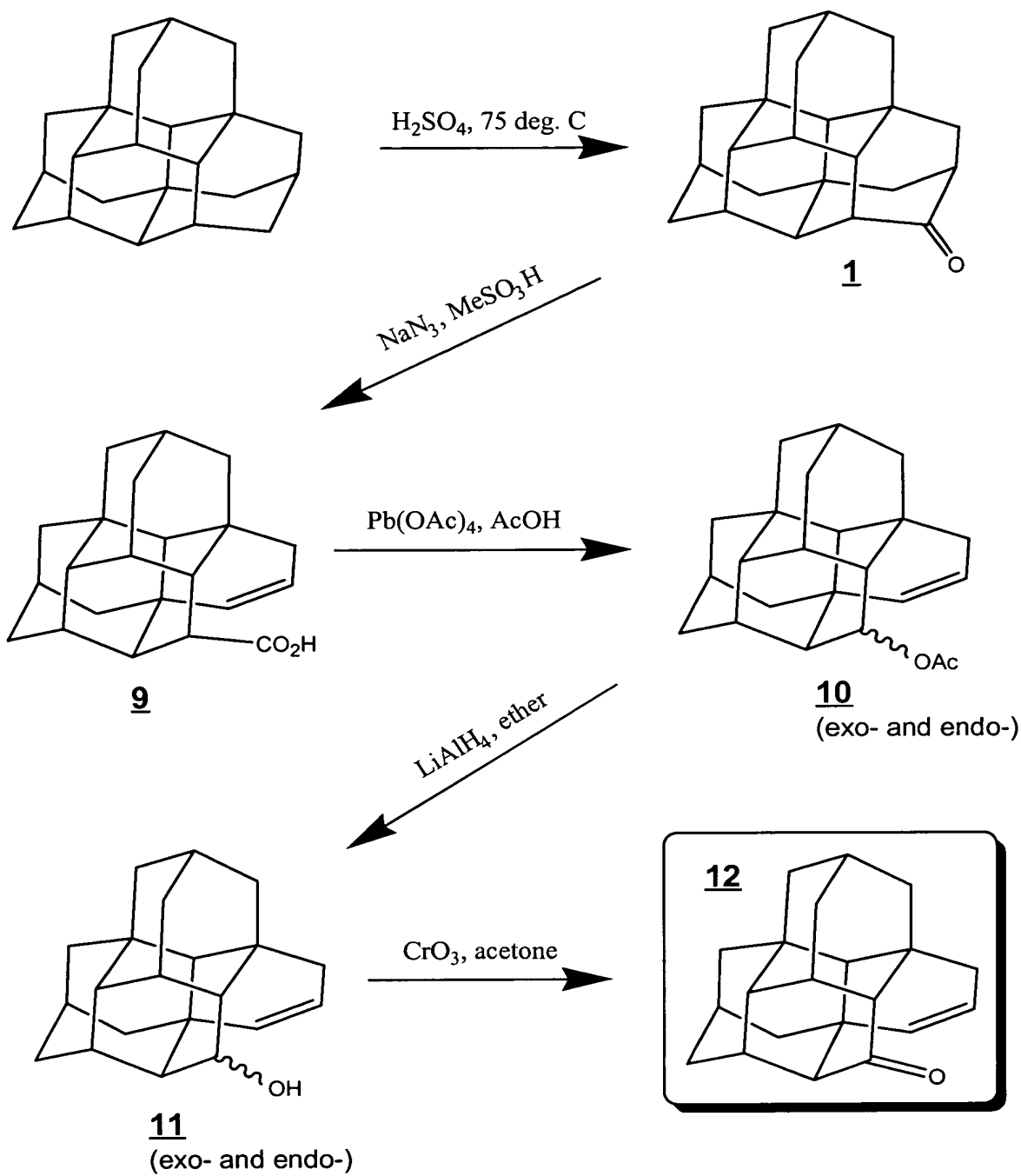


FIG. 5



**FIG. 5 (cont'd)**

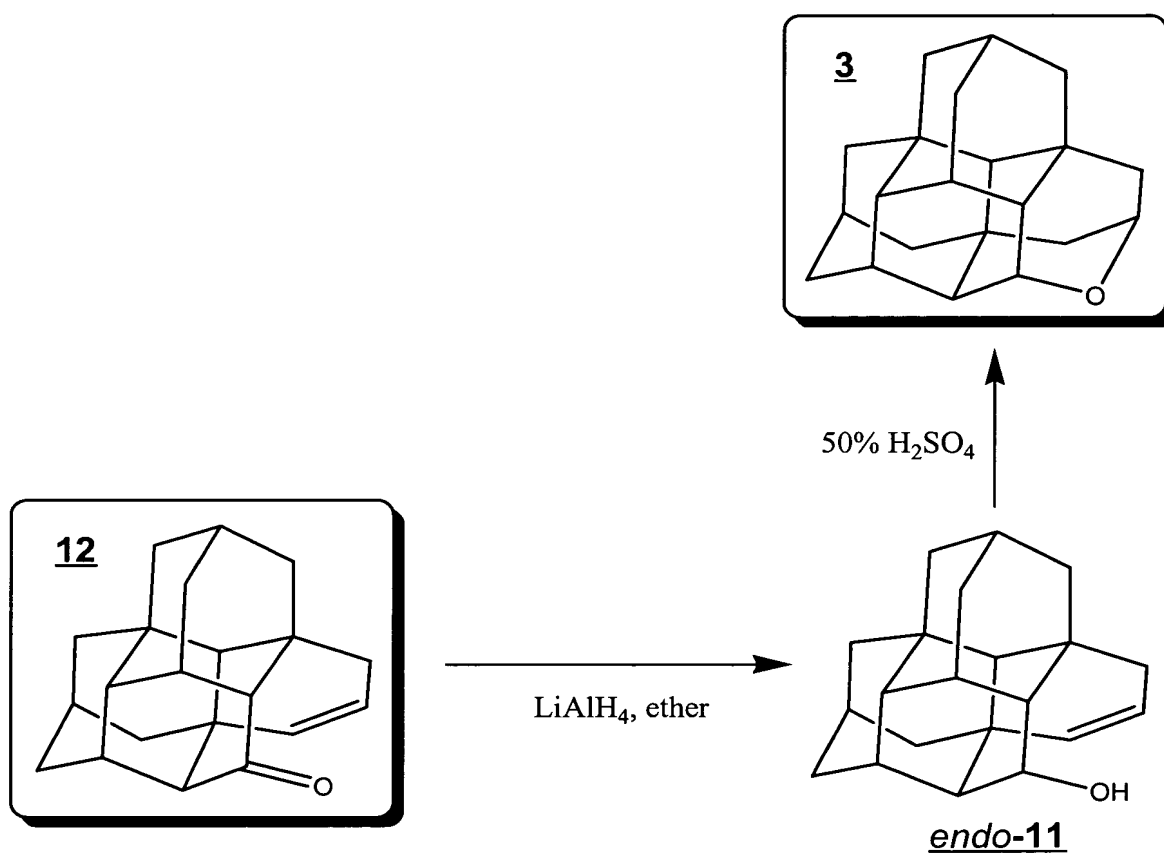


FIG. 6

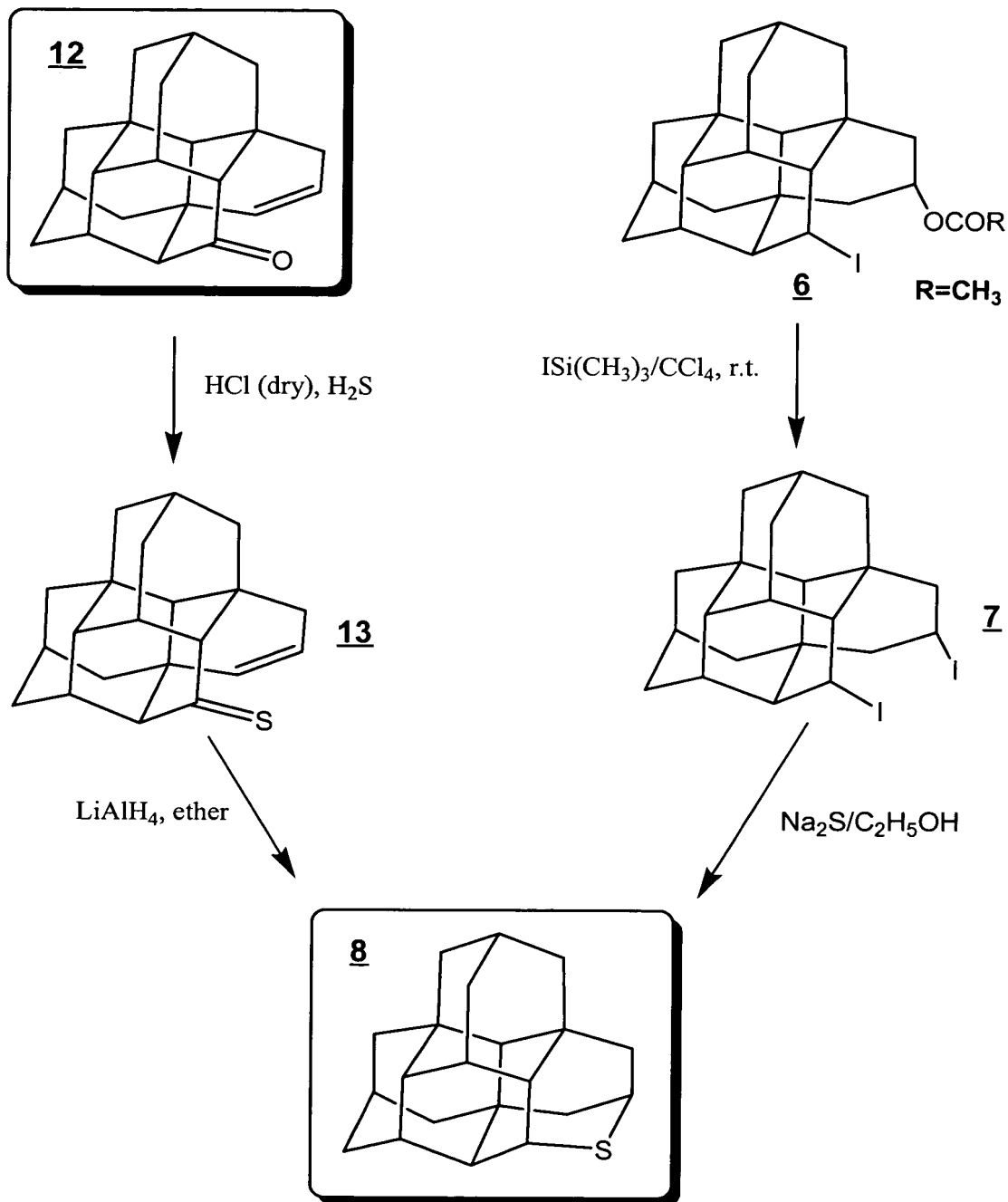
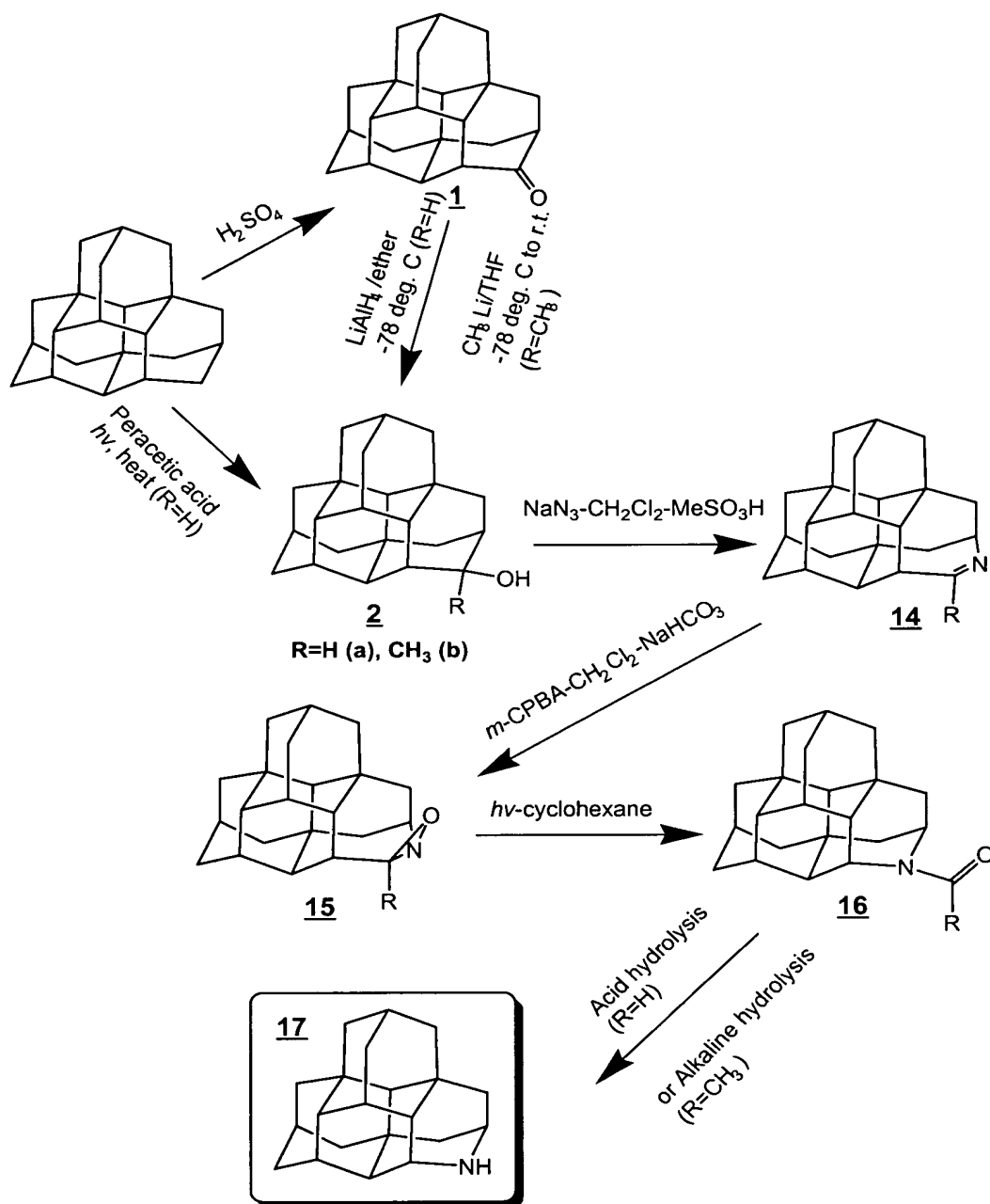


FIG. 7





**FIG. 8**

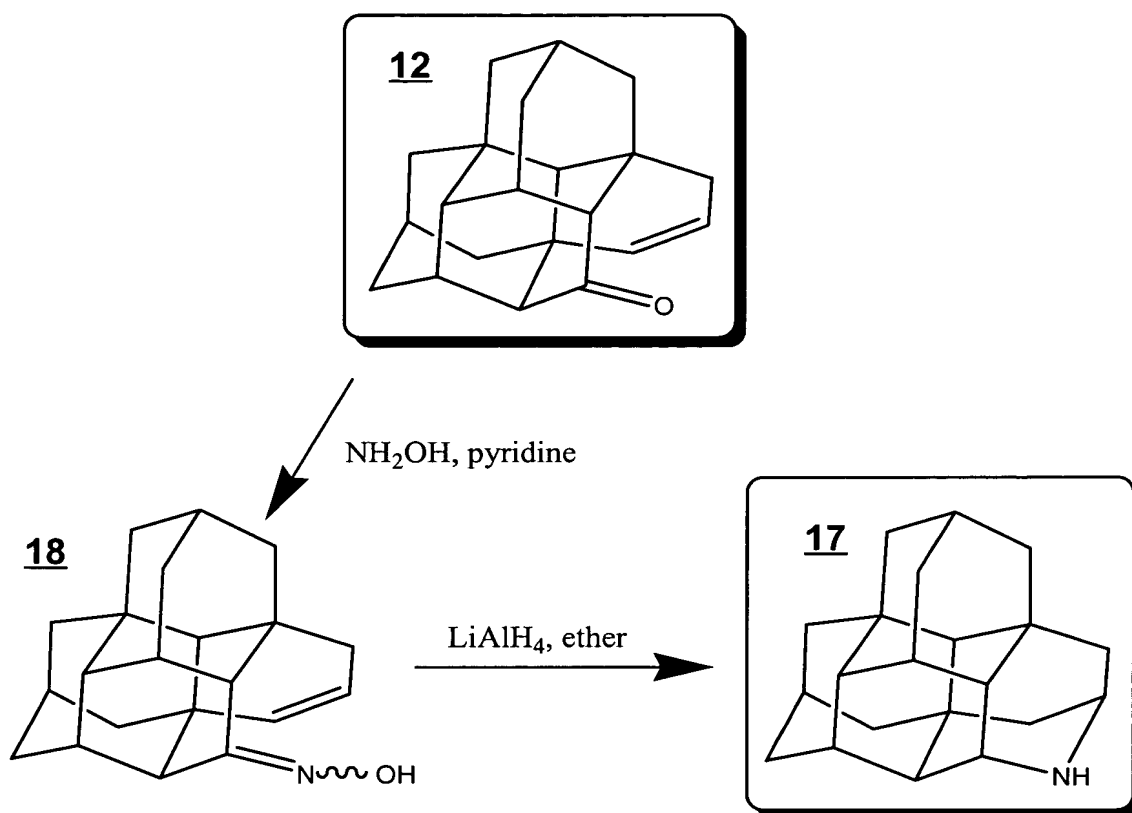
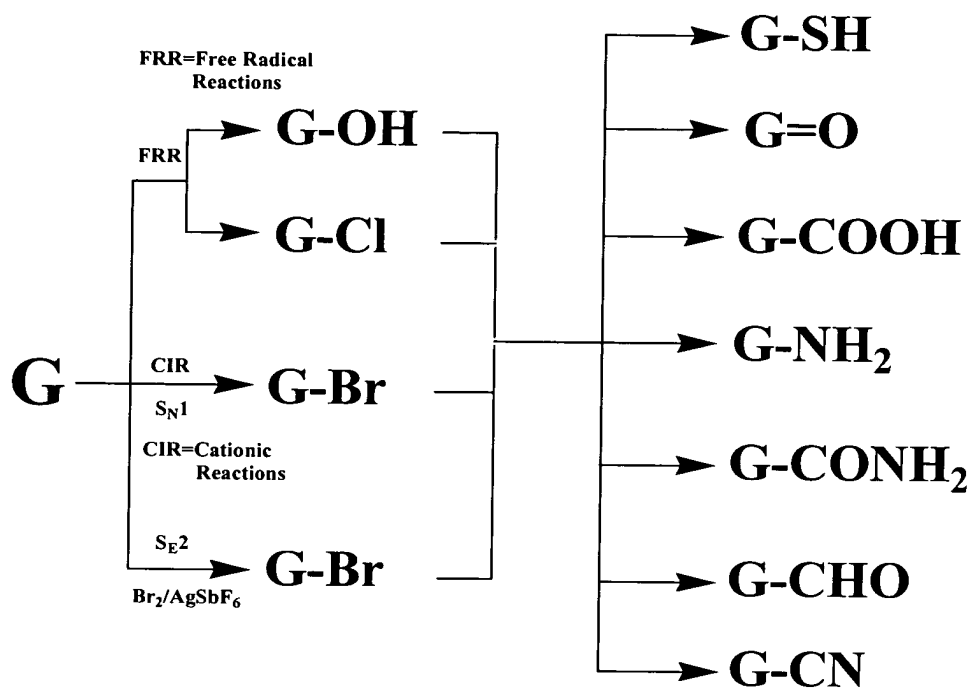
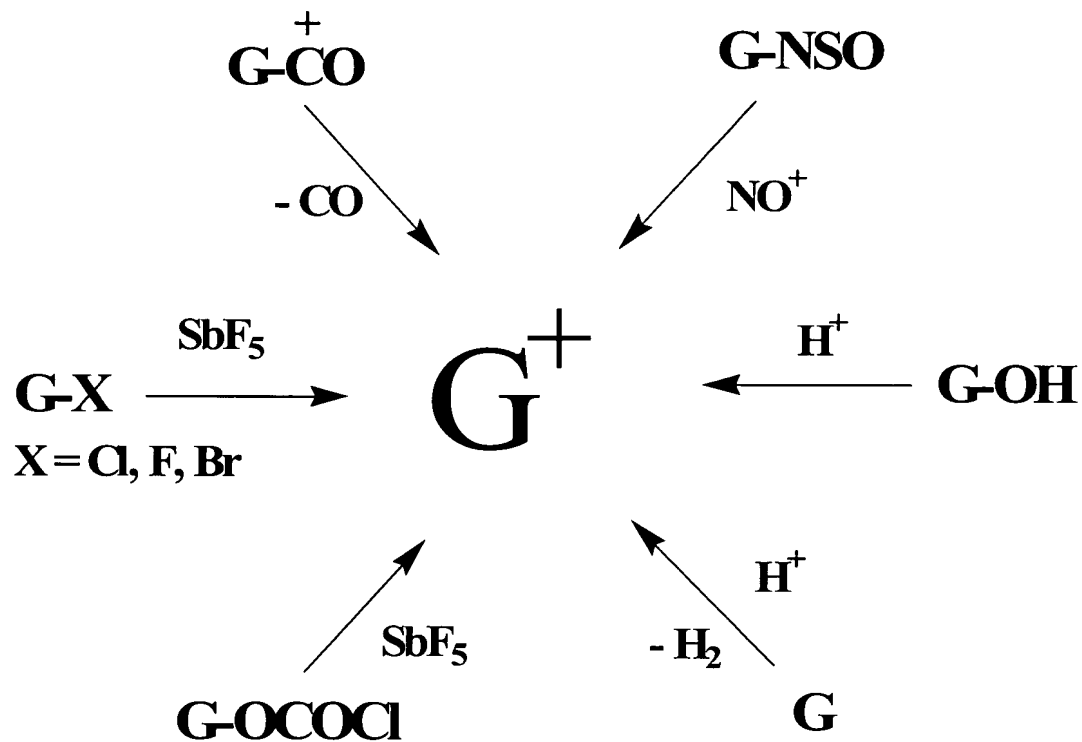


FIG. 9



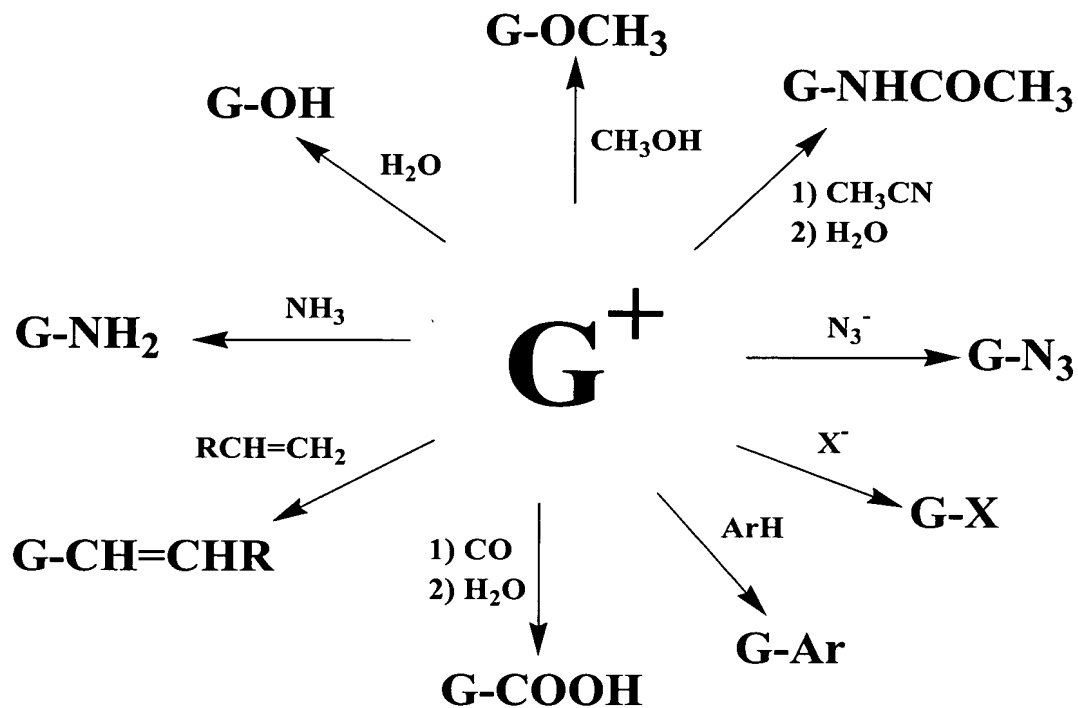
**FIG. 10**

**Representative Ways of Generation of Heterodiamondoid Cations**



## FIG. 11

### Representative S<sub>N</sub>1 Reactions of Heterodiamondoid Carbocations



**FIG. 12**

**Representative S<sub>E</sub>2 Reactions of Heterodiamondoids**

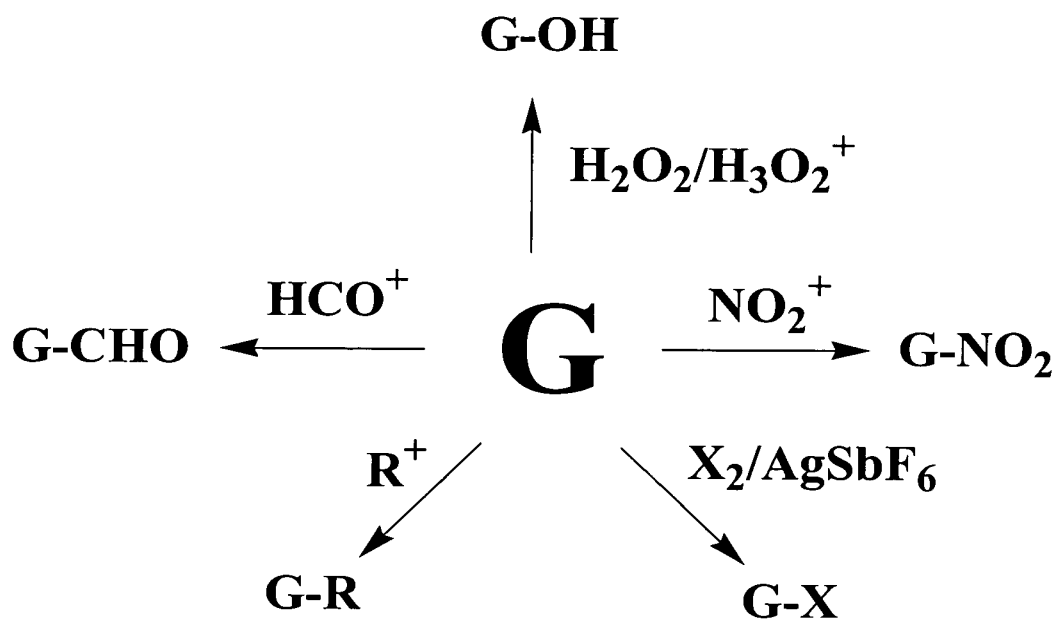
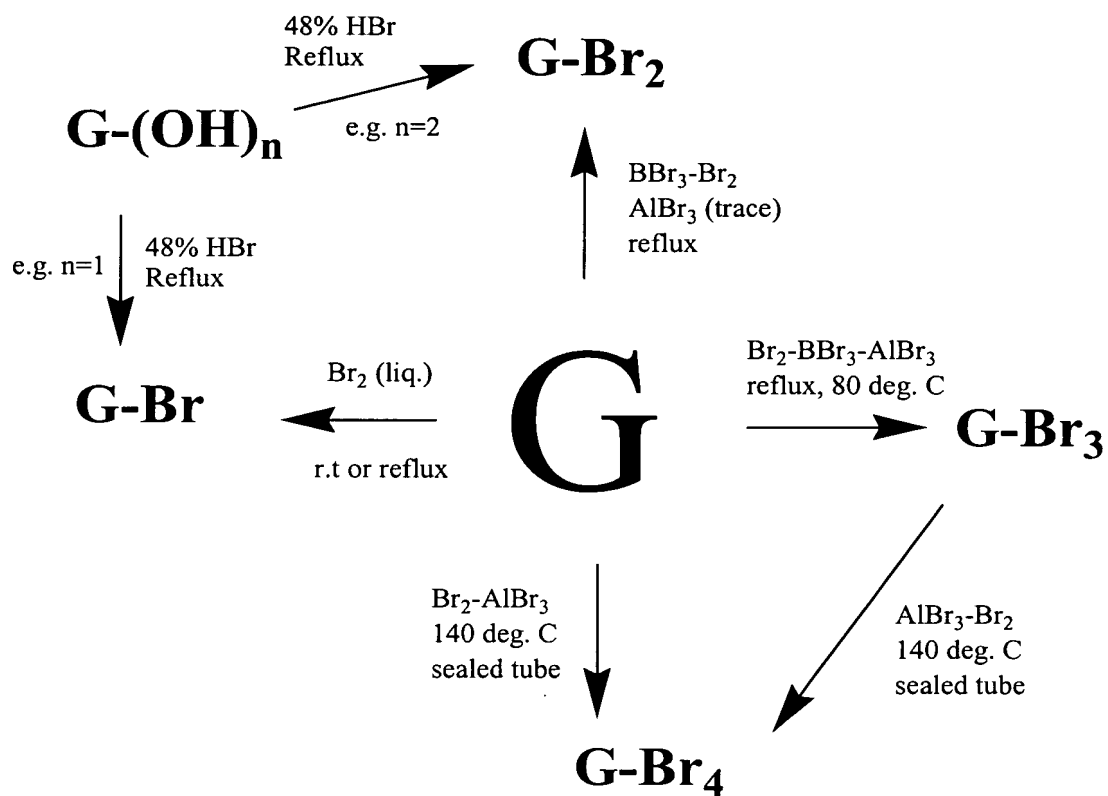


FIG. 13



**FIG. 14**

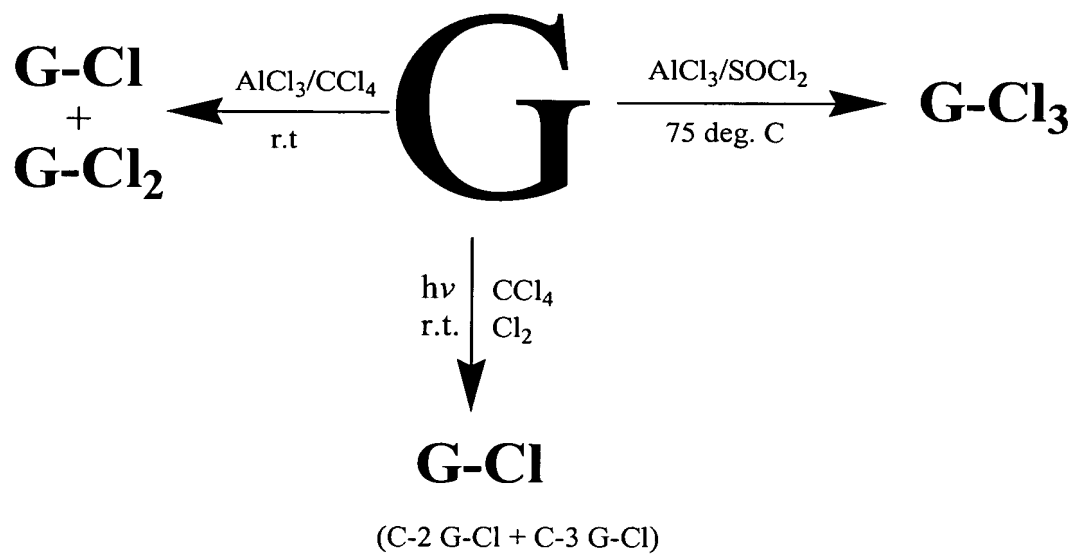


FIG. 15

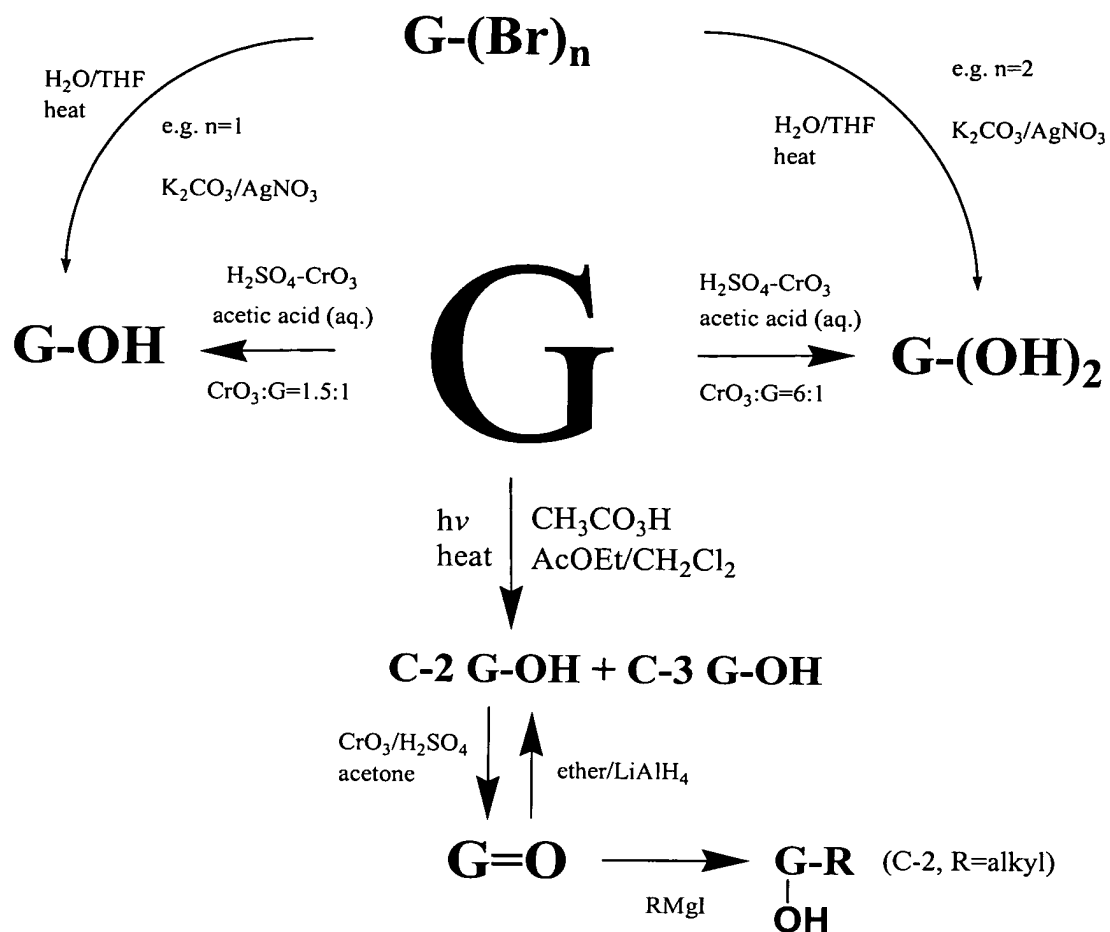




FIG. 16

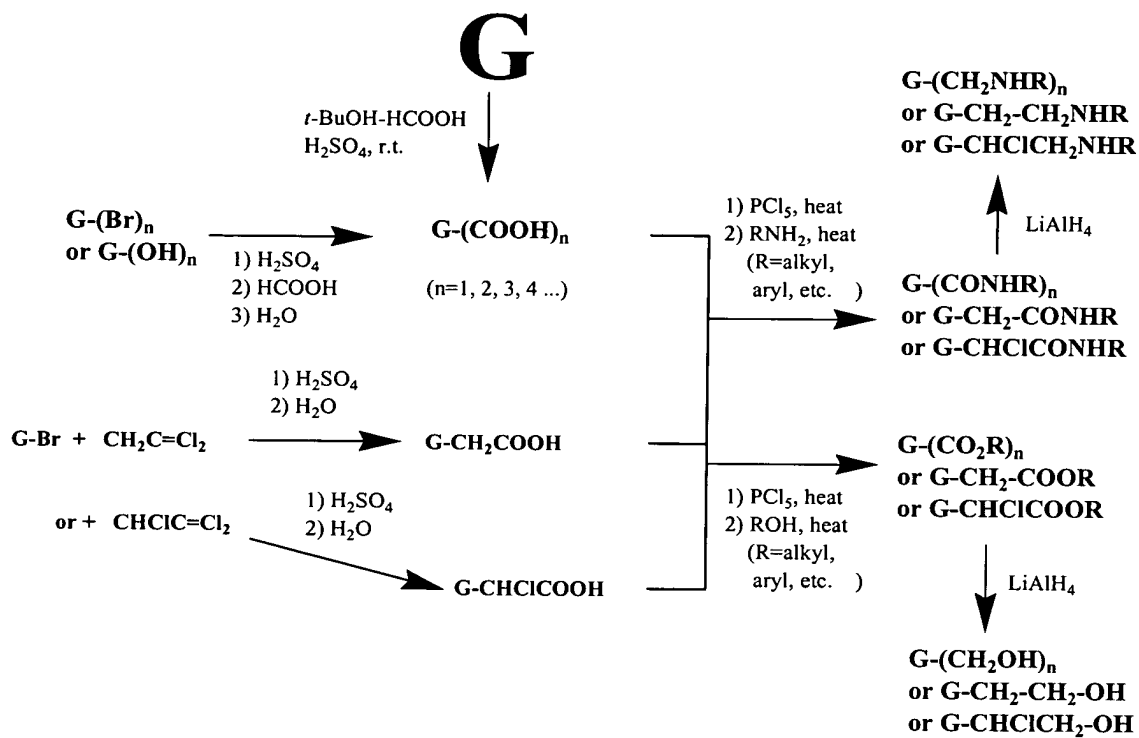


FIG. 17

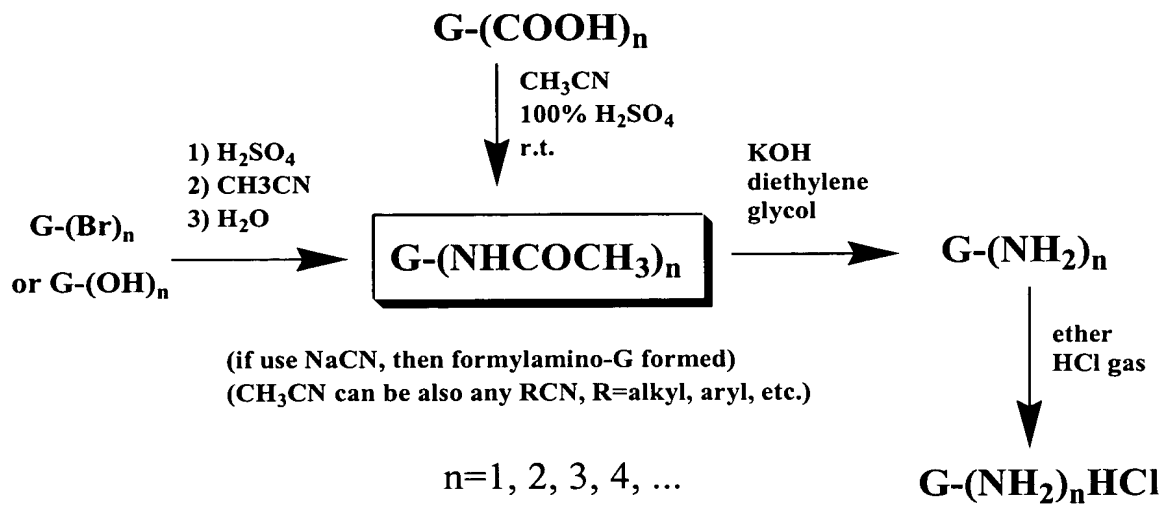


FIG. 18

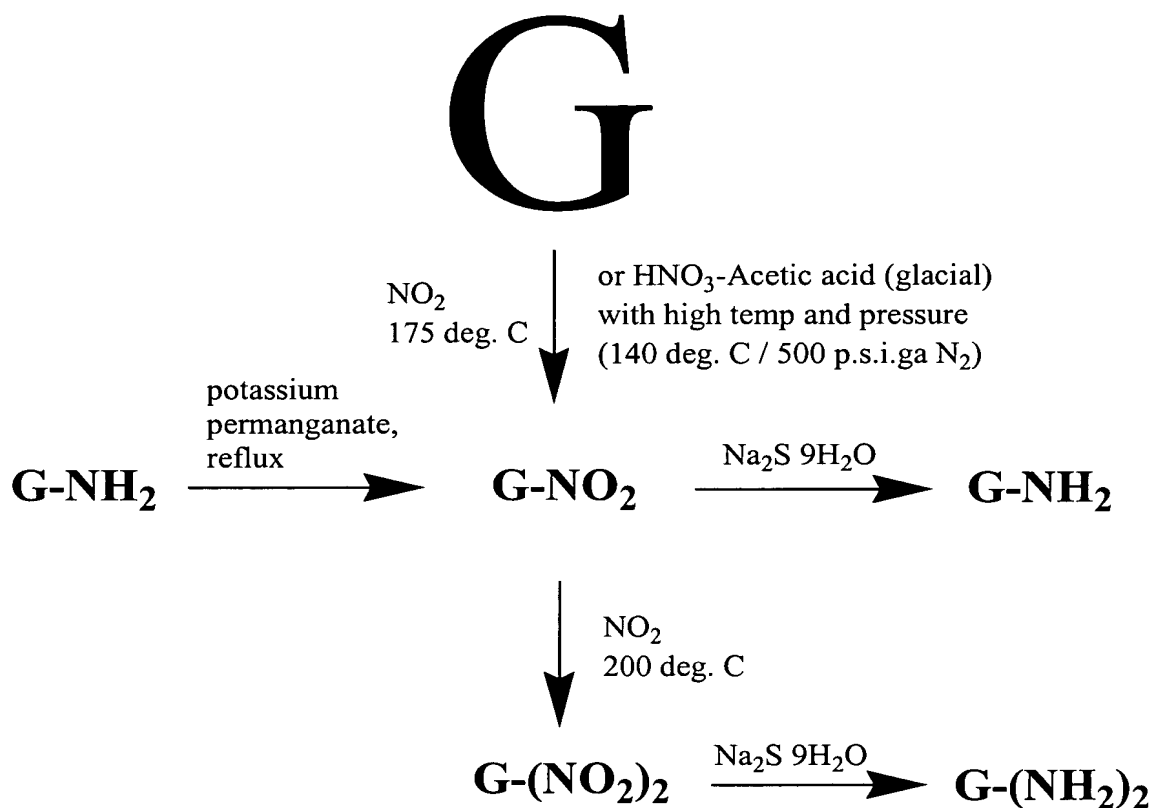


FIG. 19

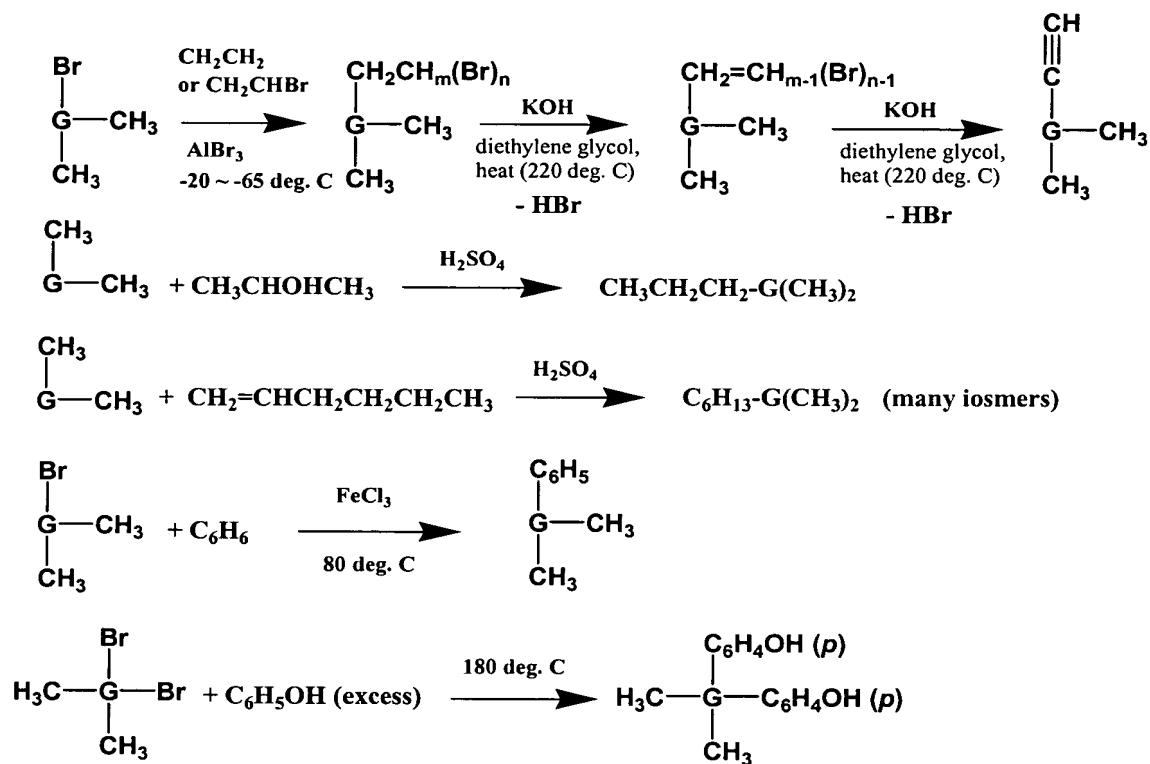


FIG. 20

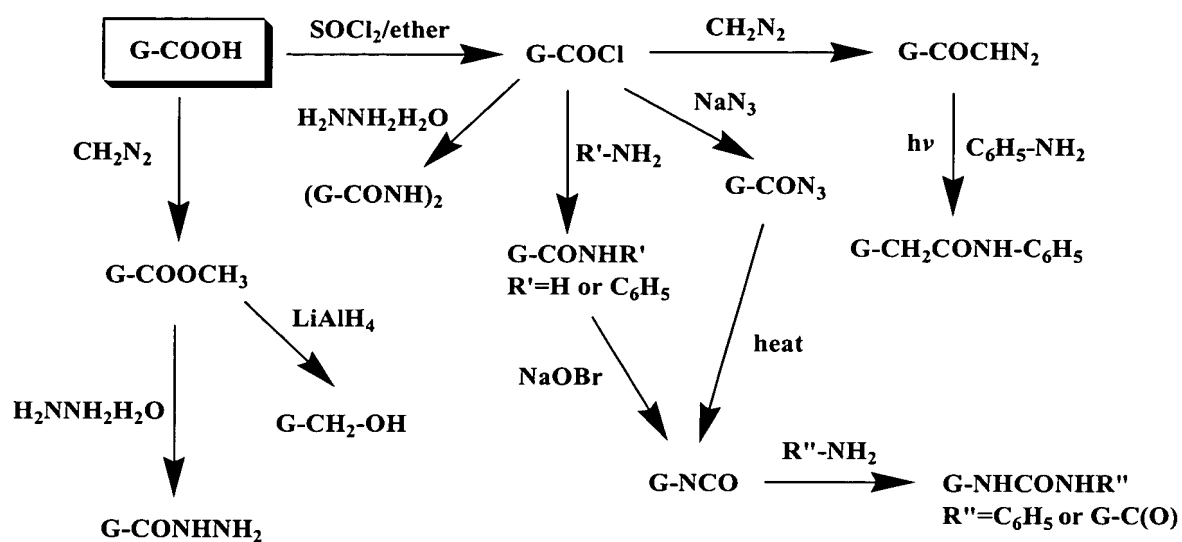


FIG. 21

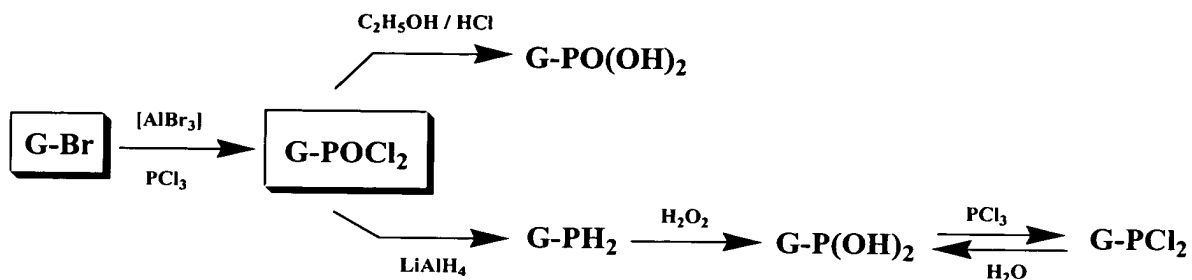


FIG. 22

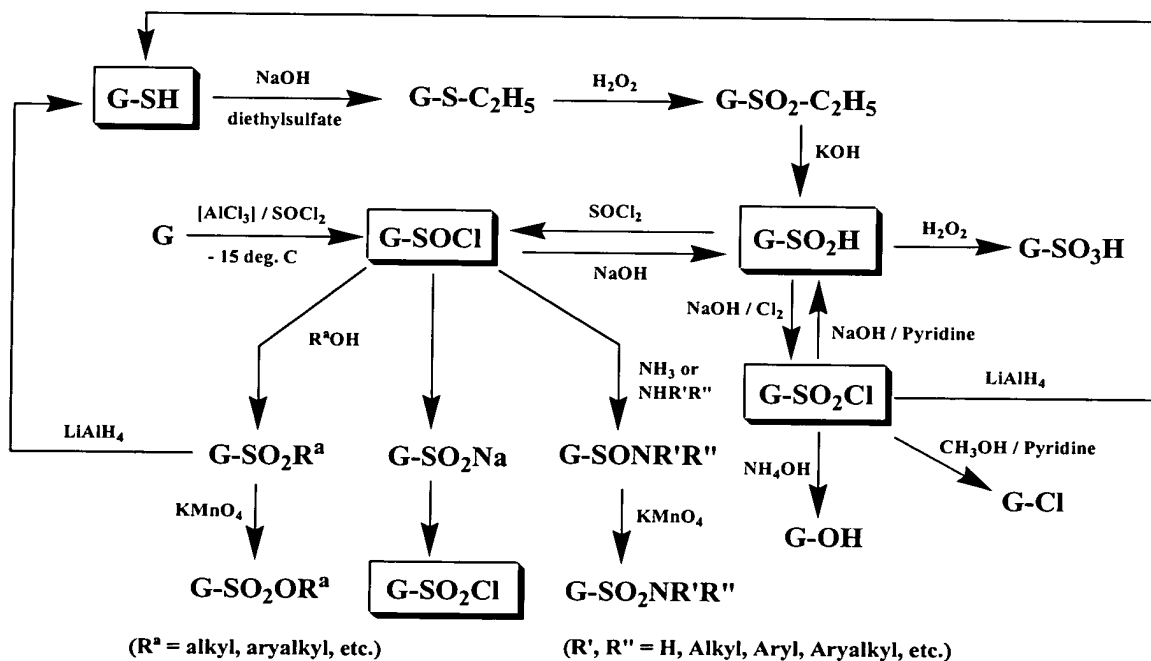


FIG. 23

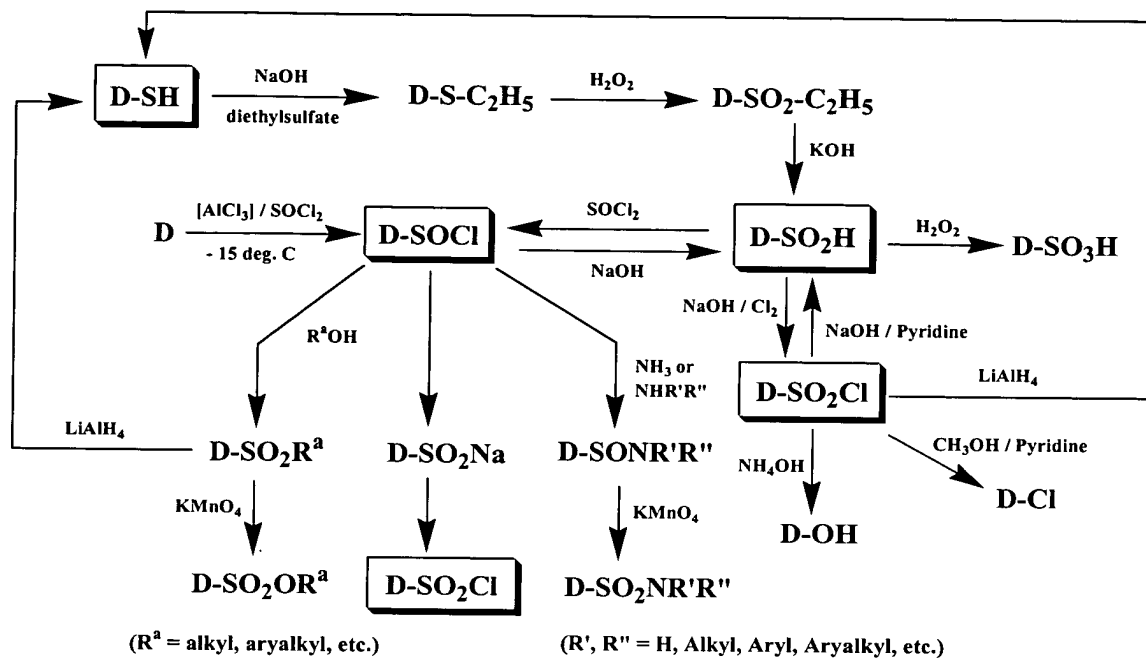


FIG. 24

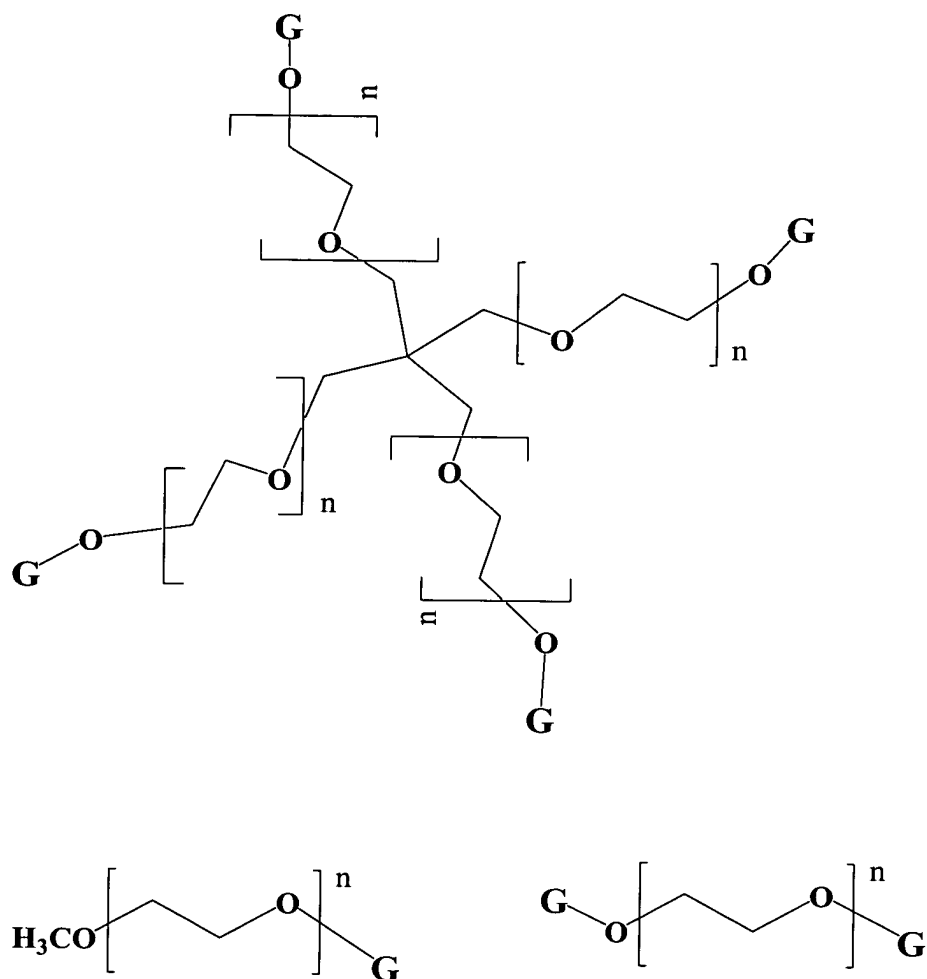




FIG. 25

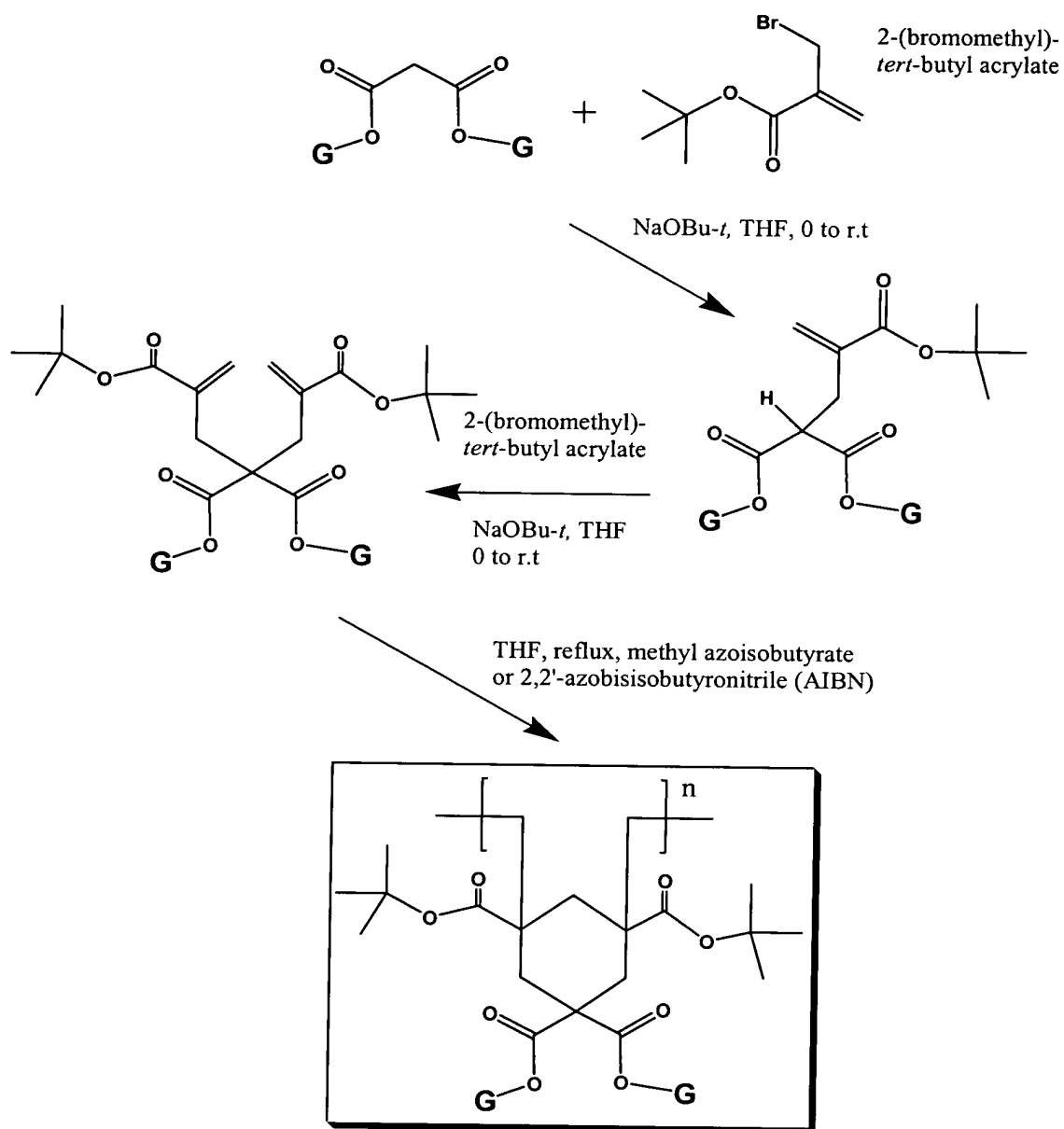


FIG. 26

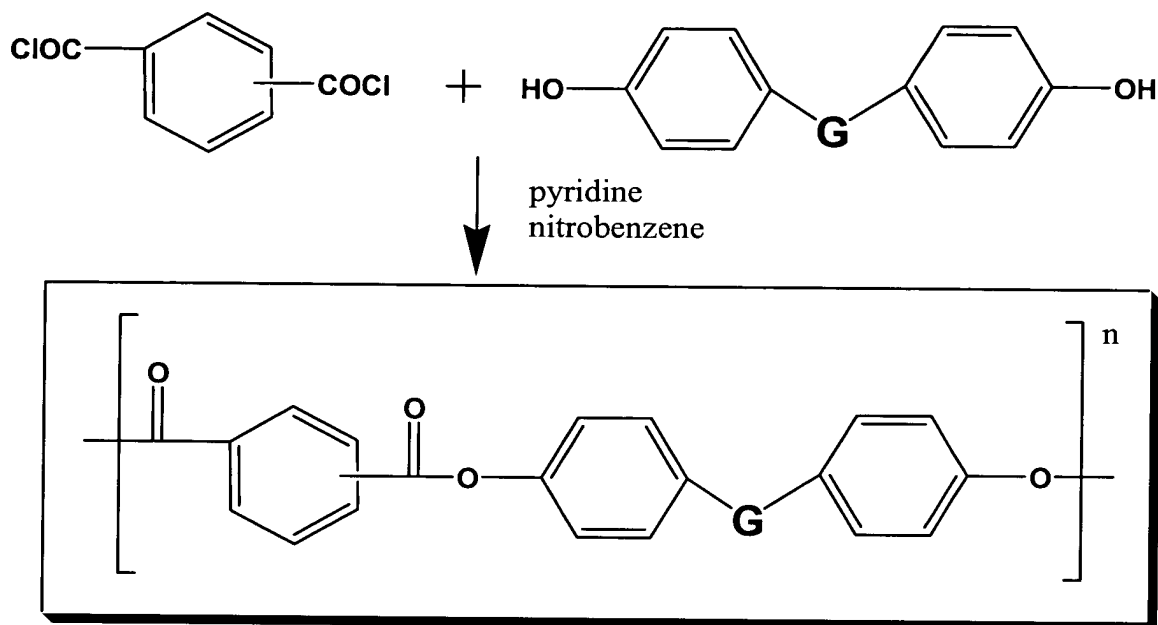
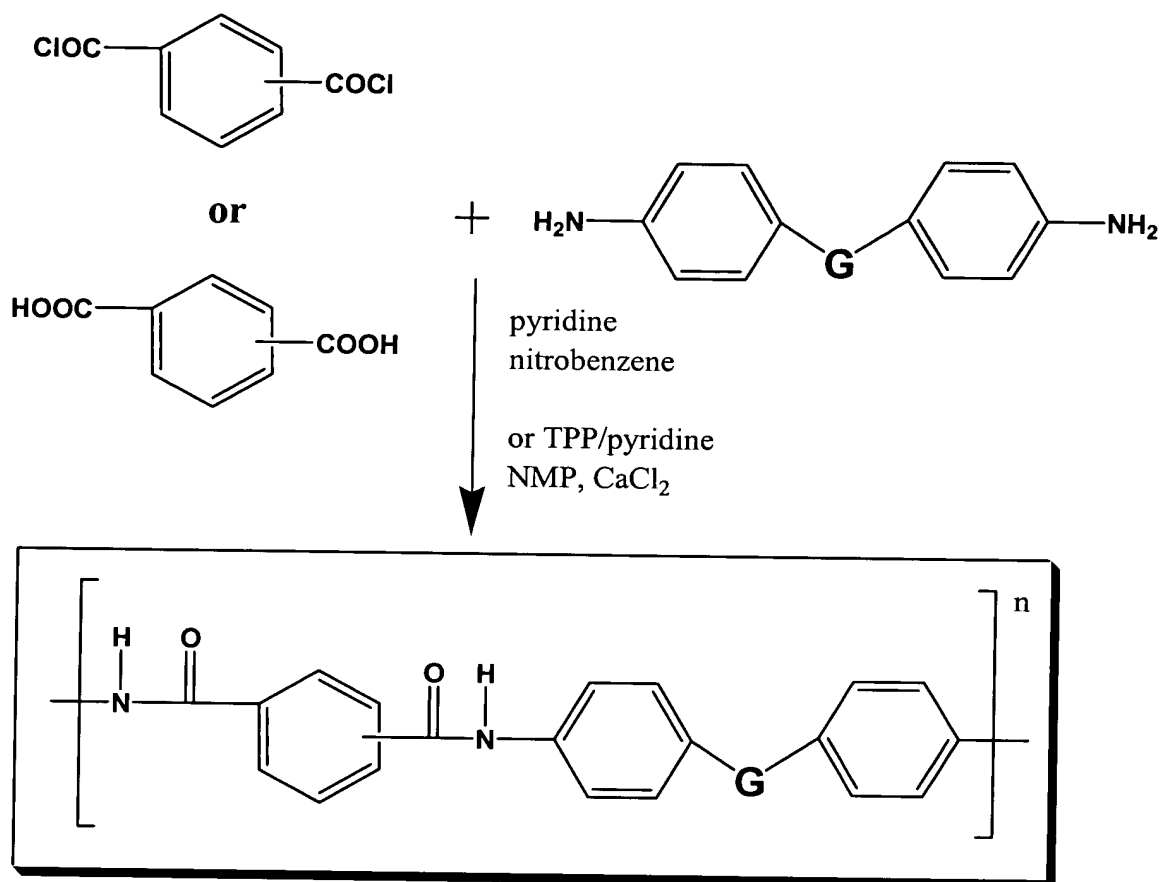


FIG. 27



**FIG. 28**

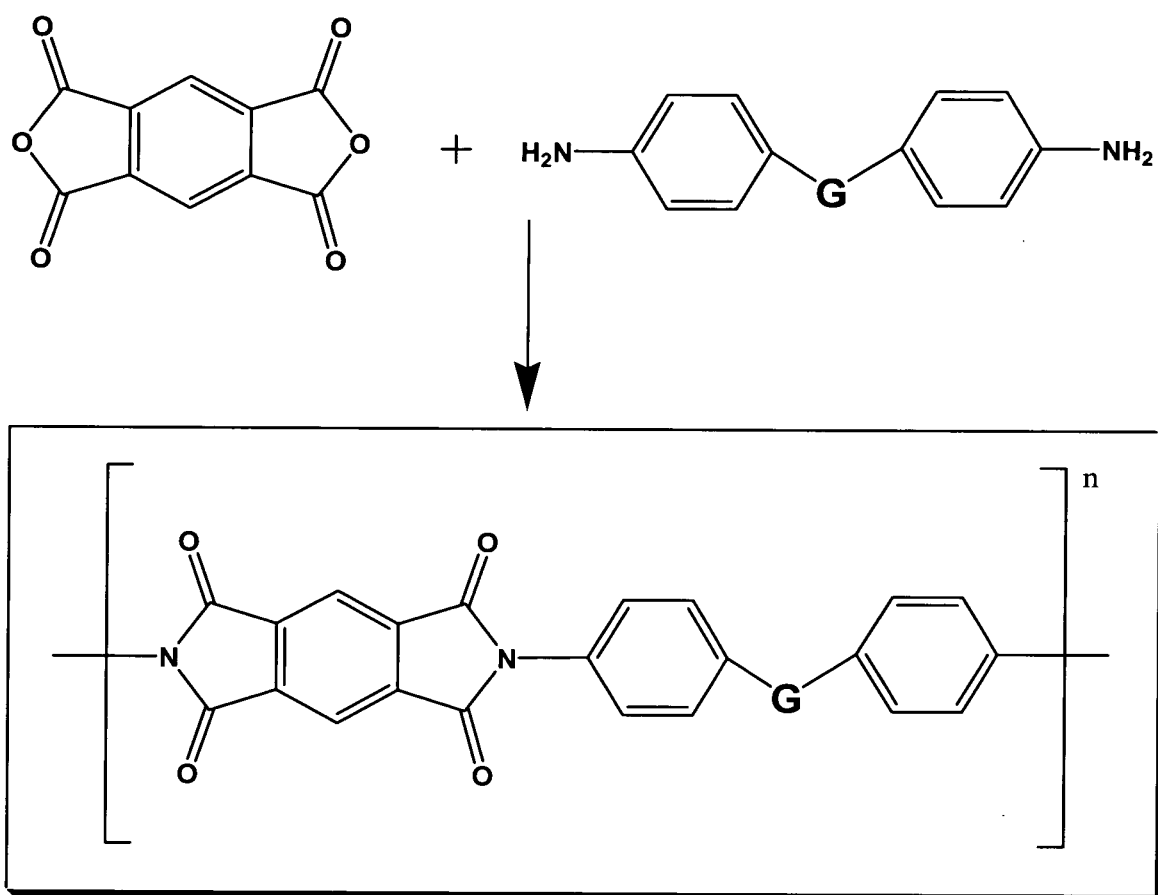




FIG. 30

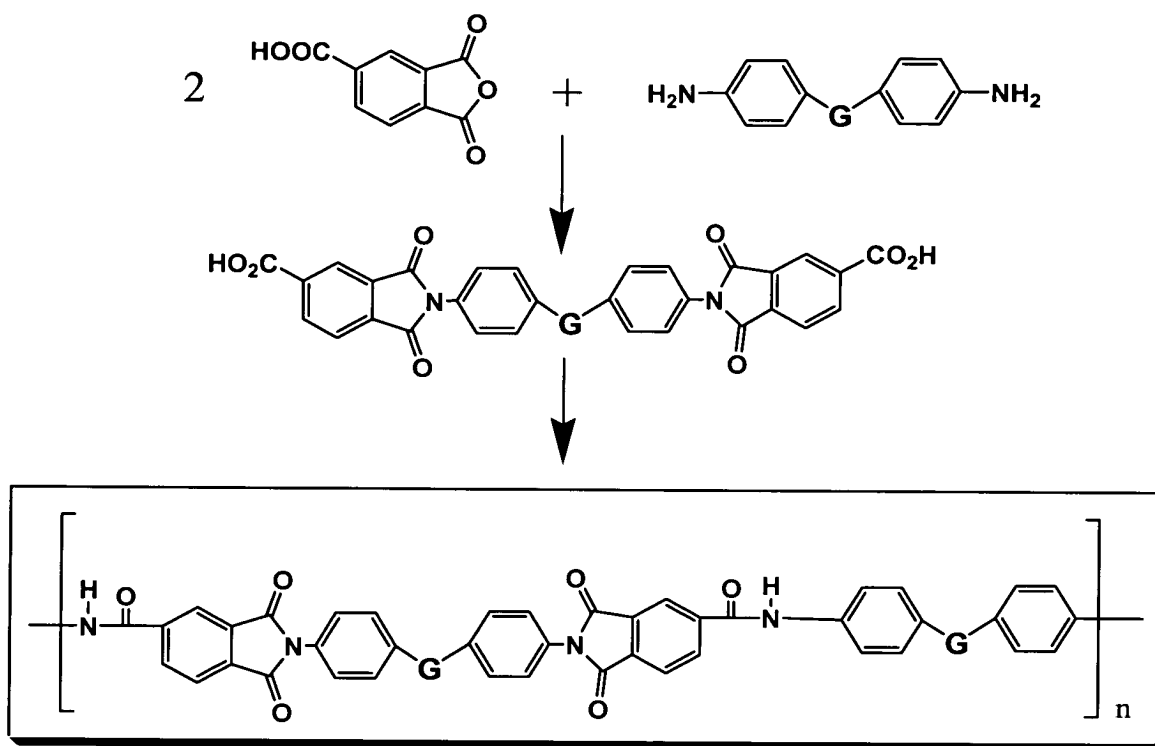
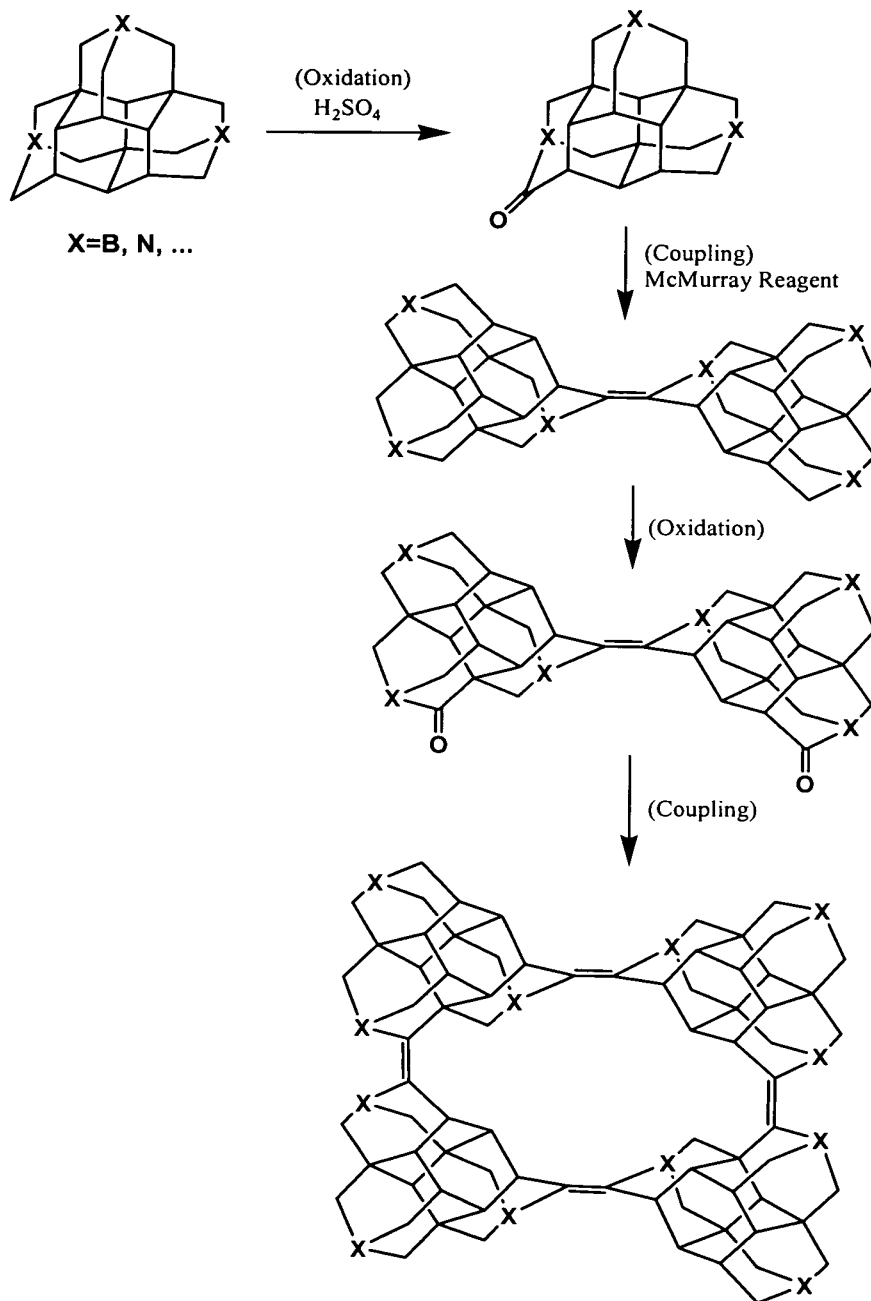
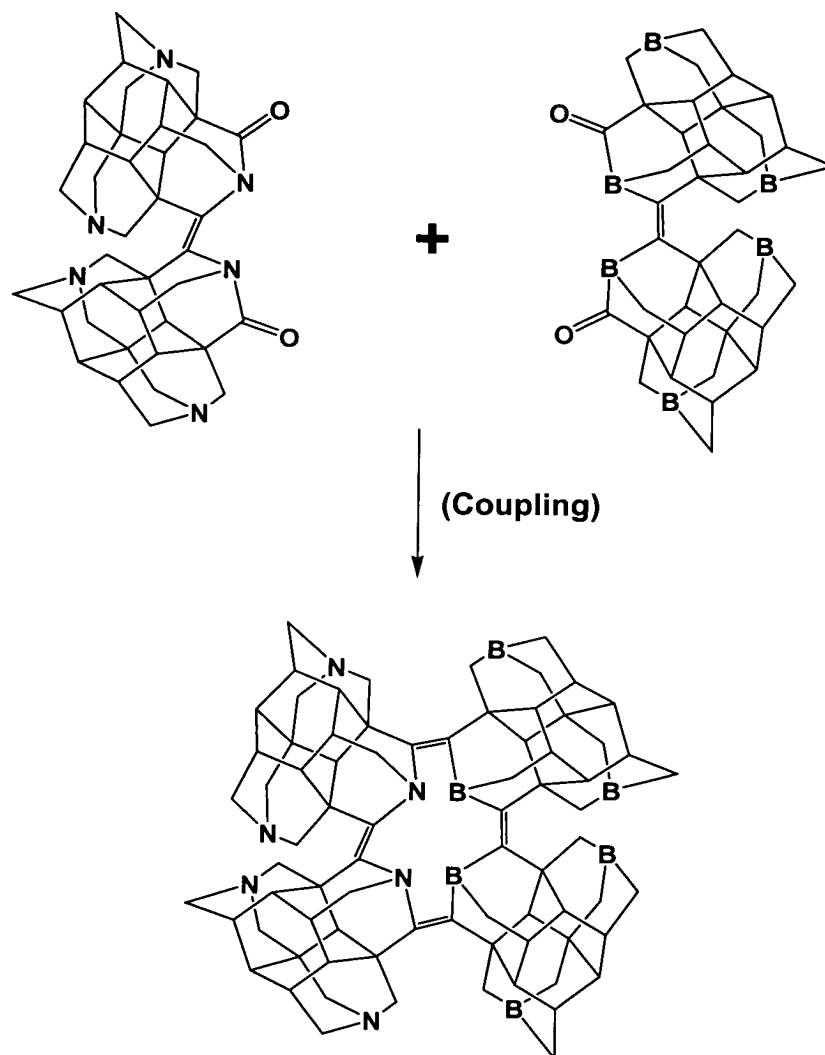


FIG. 31

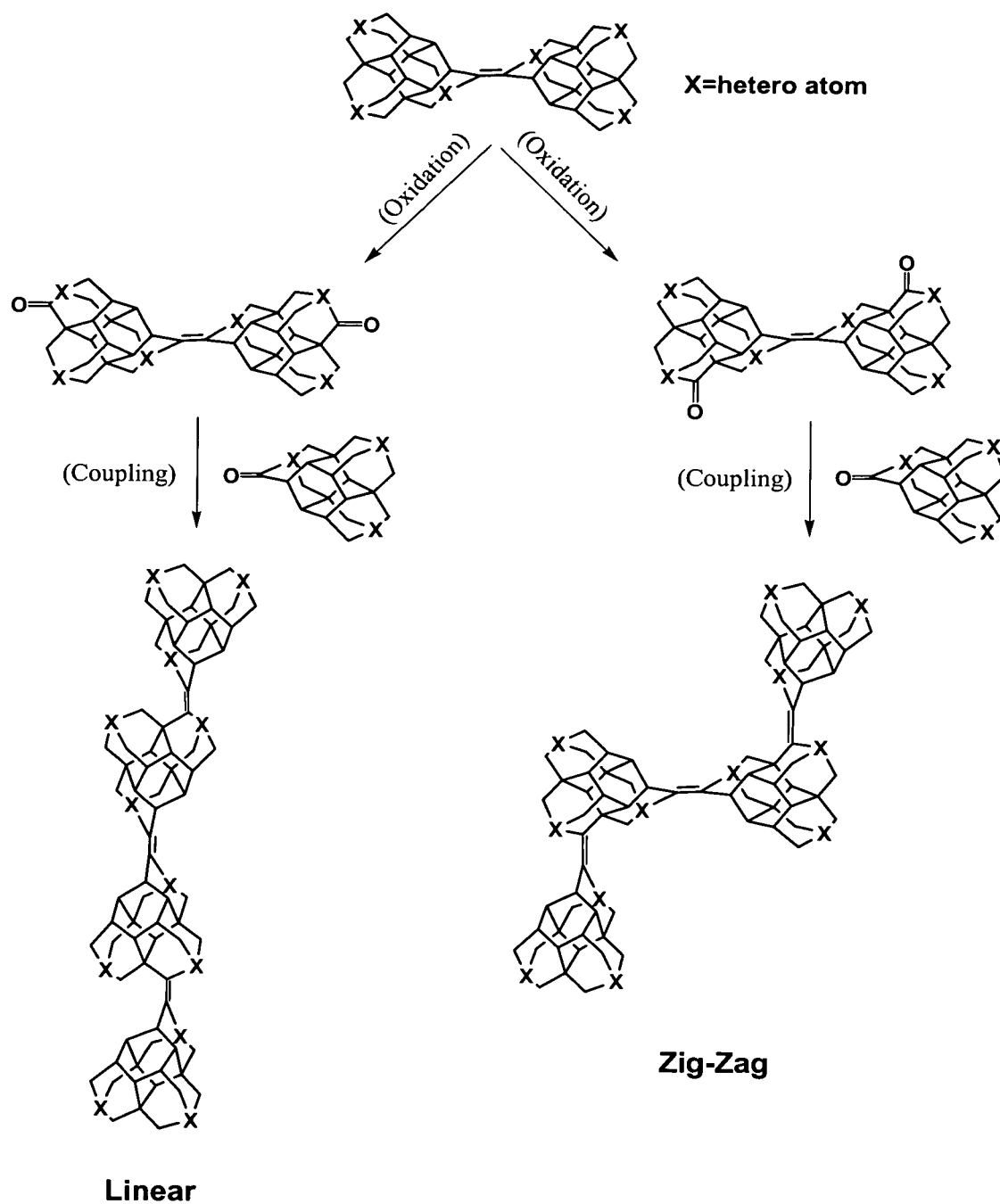


**FIG. 32**

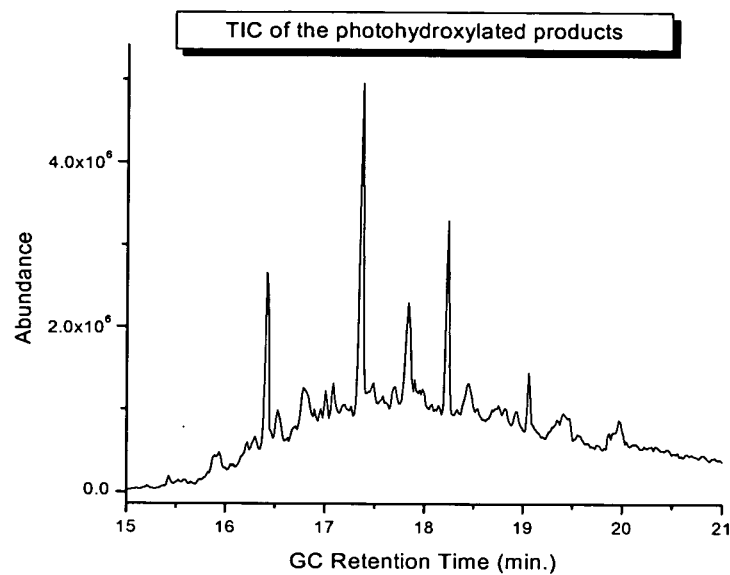




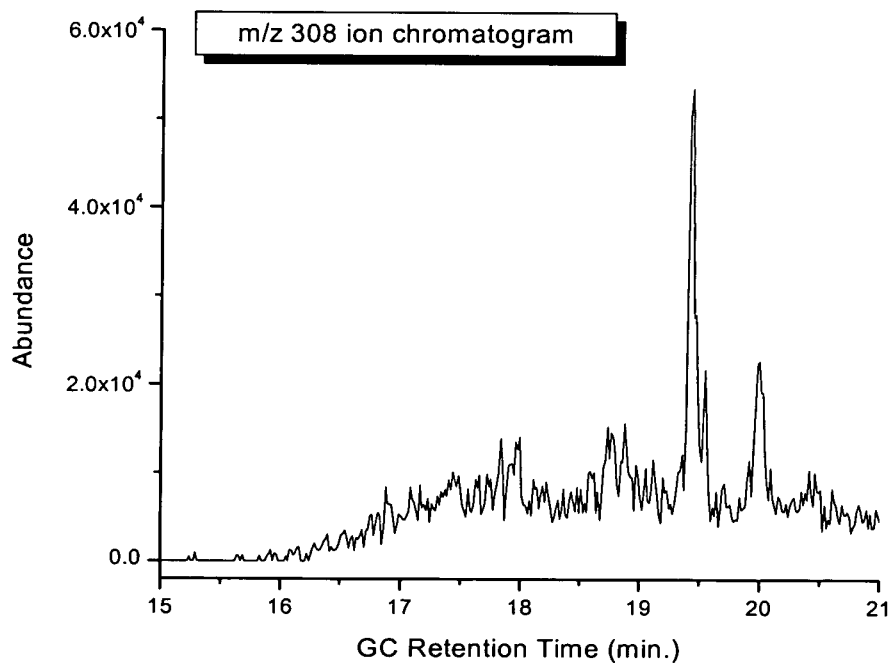
**FIG. 33**



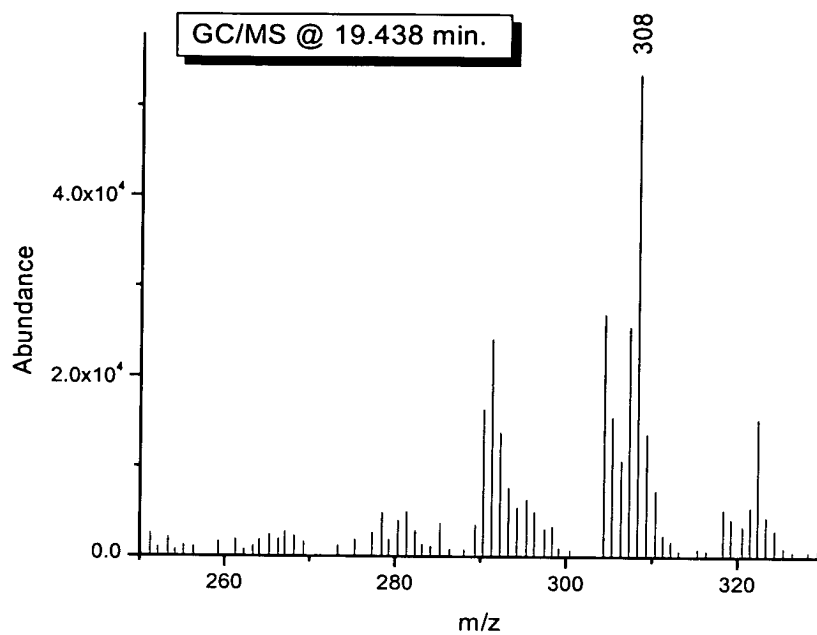
**FIG. 34**



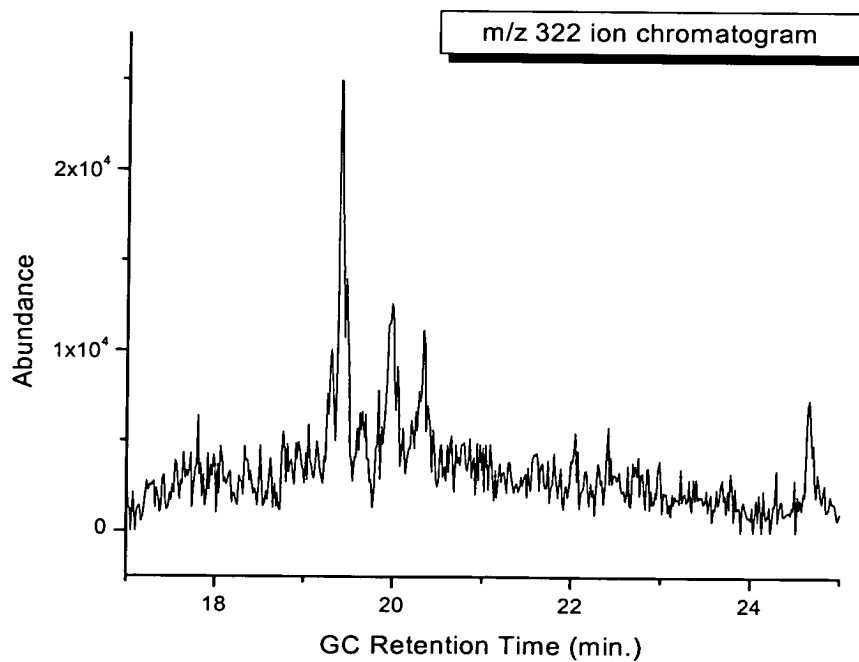
**FIG. 35**



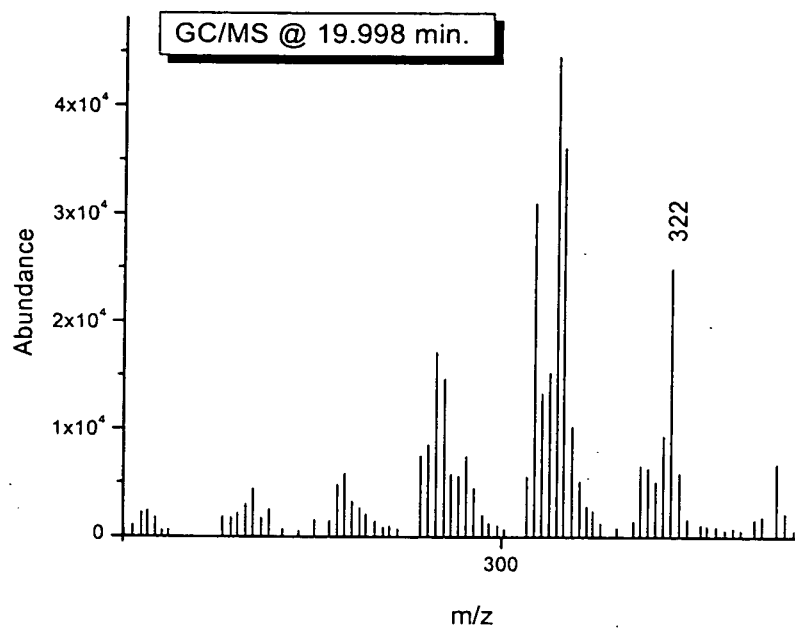
**FIG. 36**



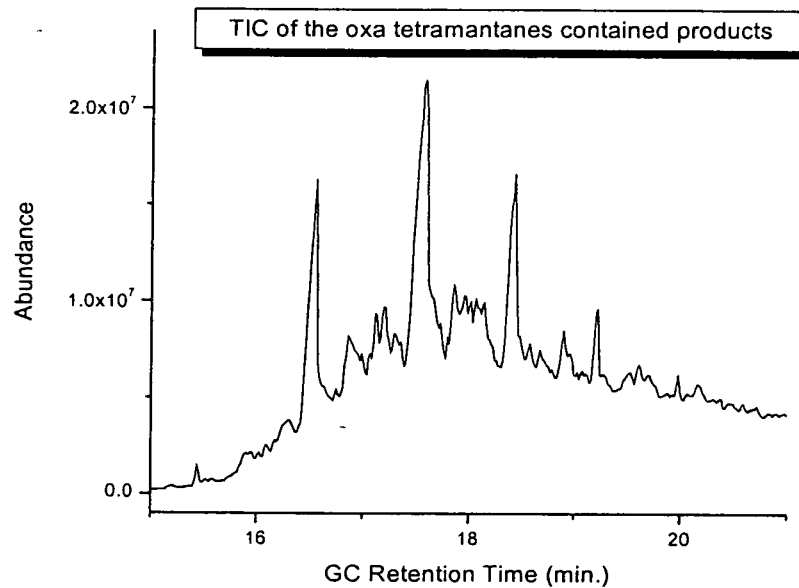
**FIG. 37**



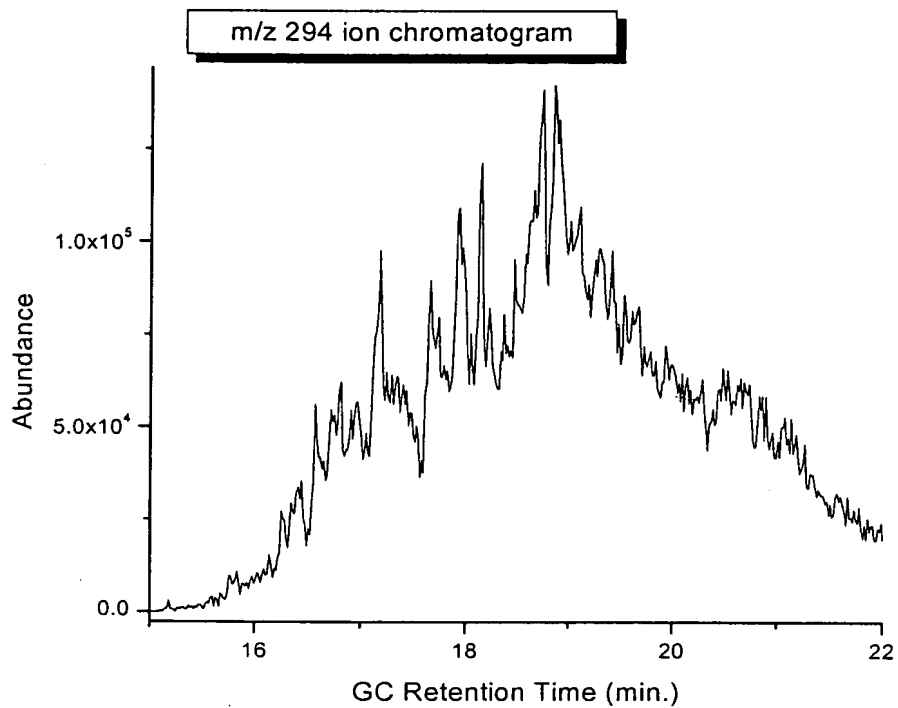
**FIG. 38**



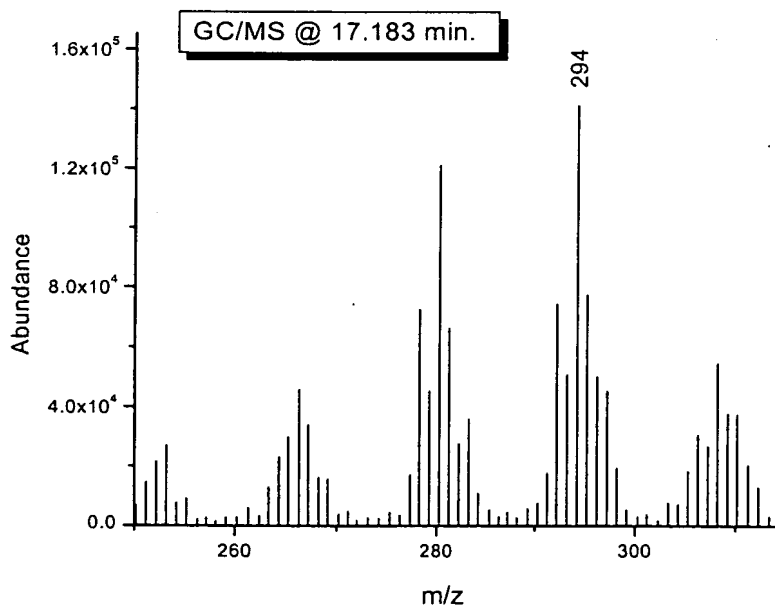
**FIG. 39**



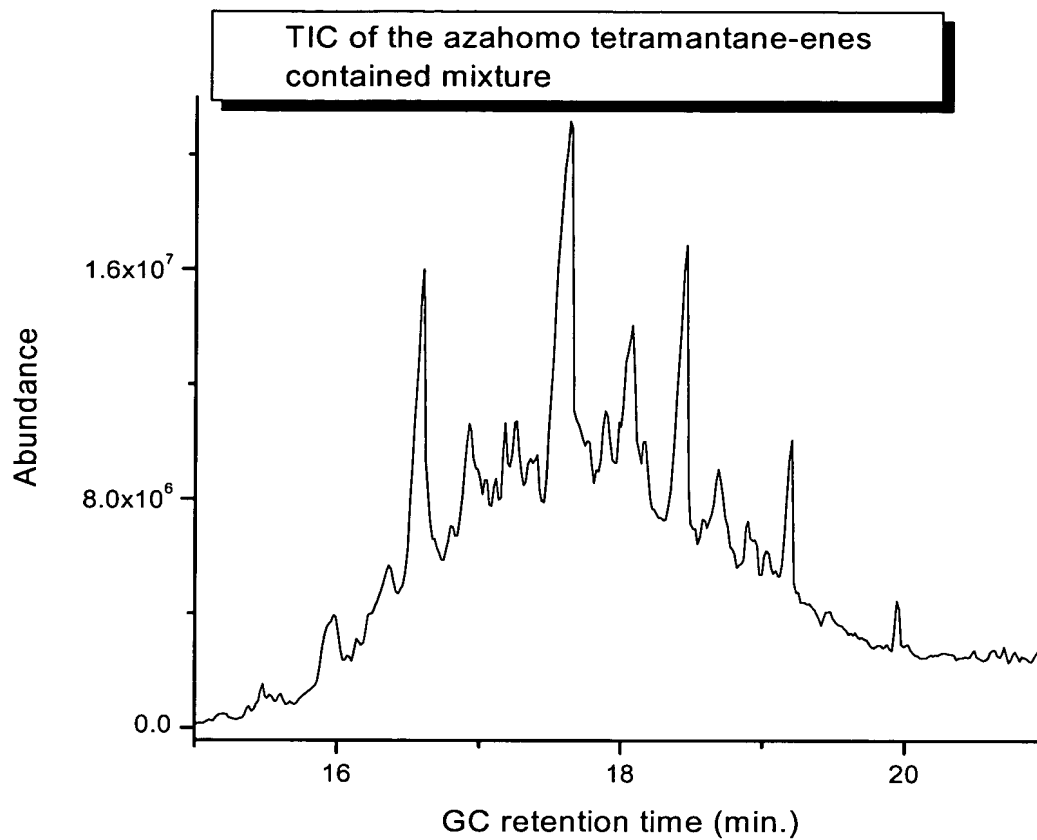
**FIG. 40**



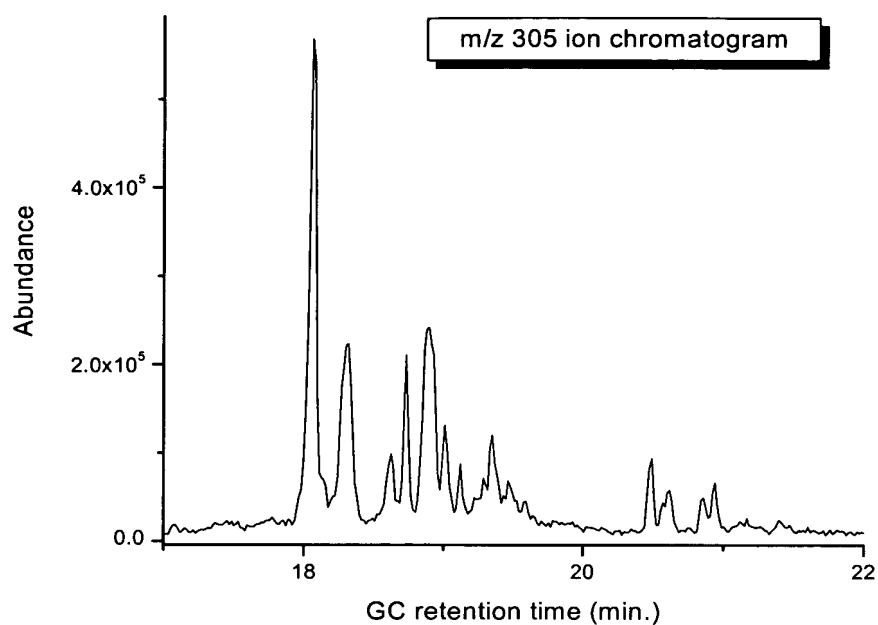
**FIG. 41**



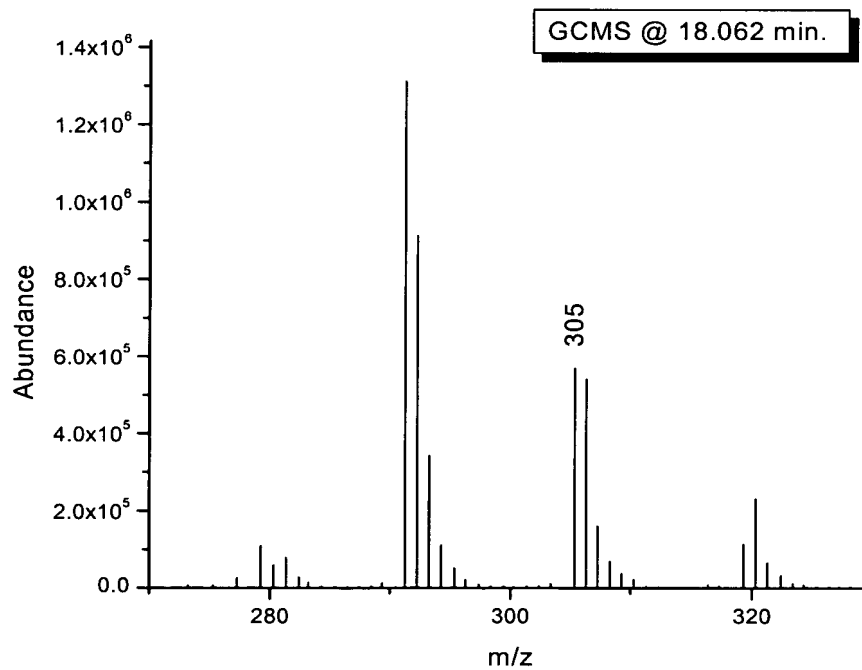
**FIG. 42**



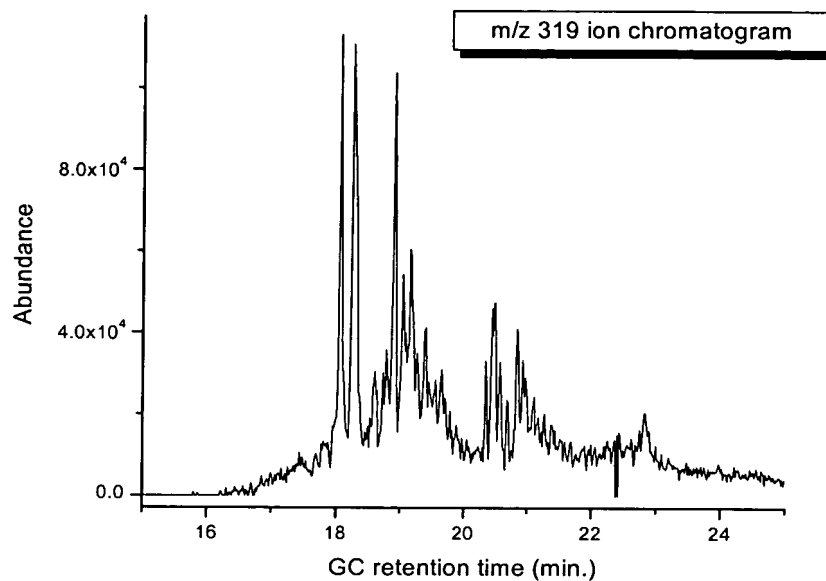
**FIG. 43**



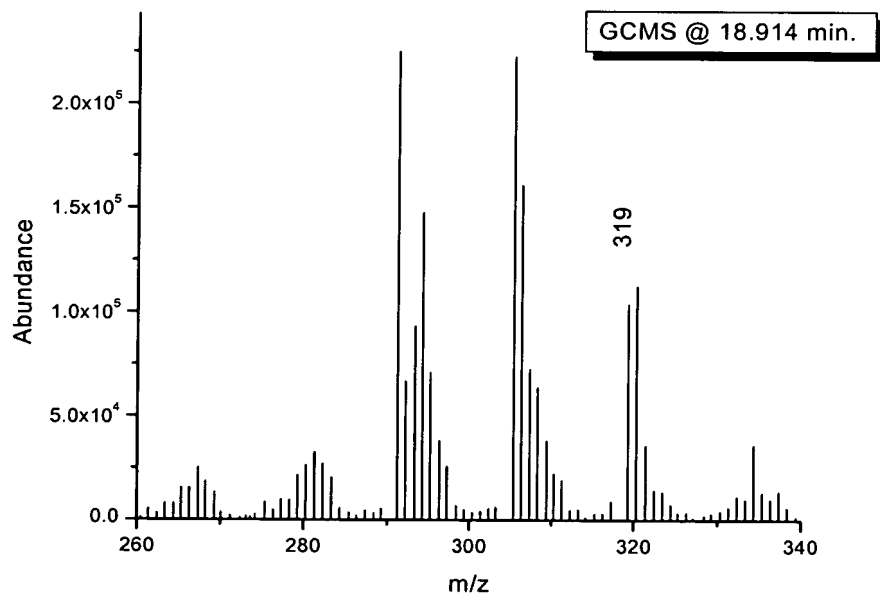
**FIG. 44**



**FIG. 45**

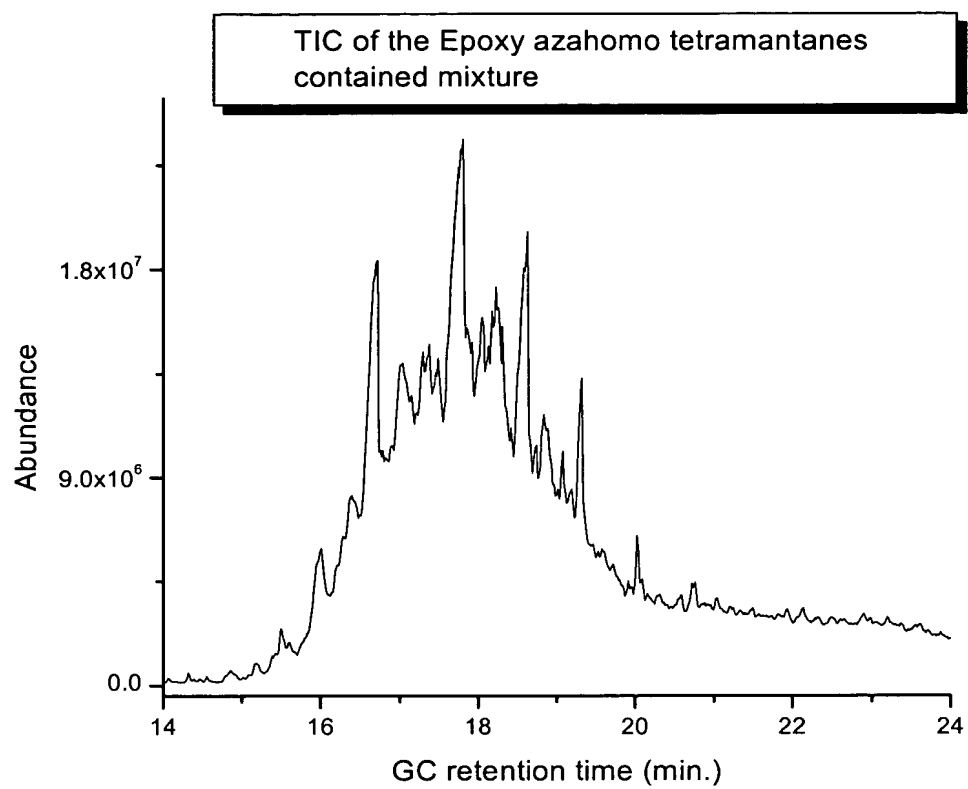


**FIG. 46**

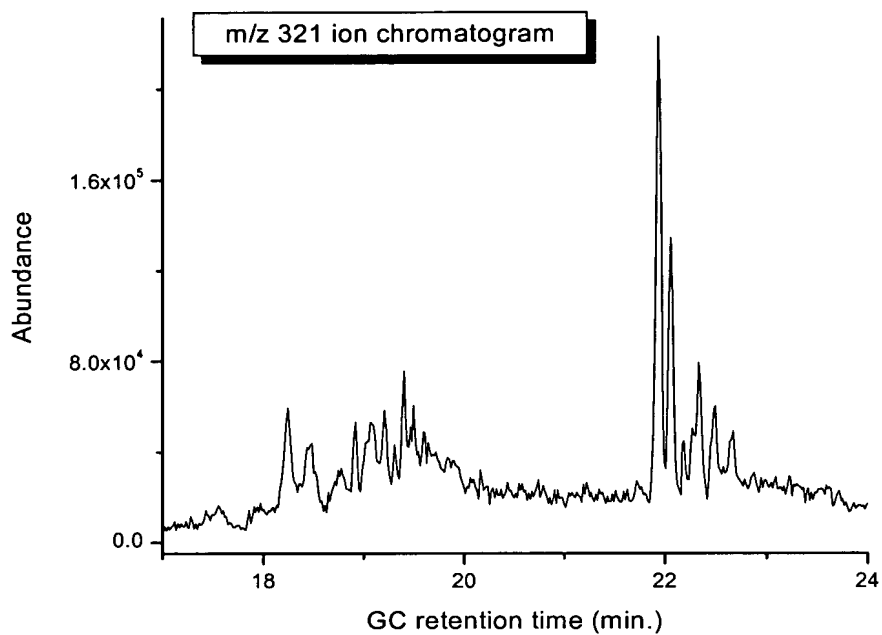




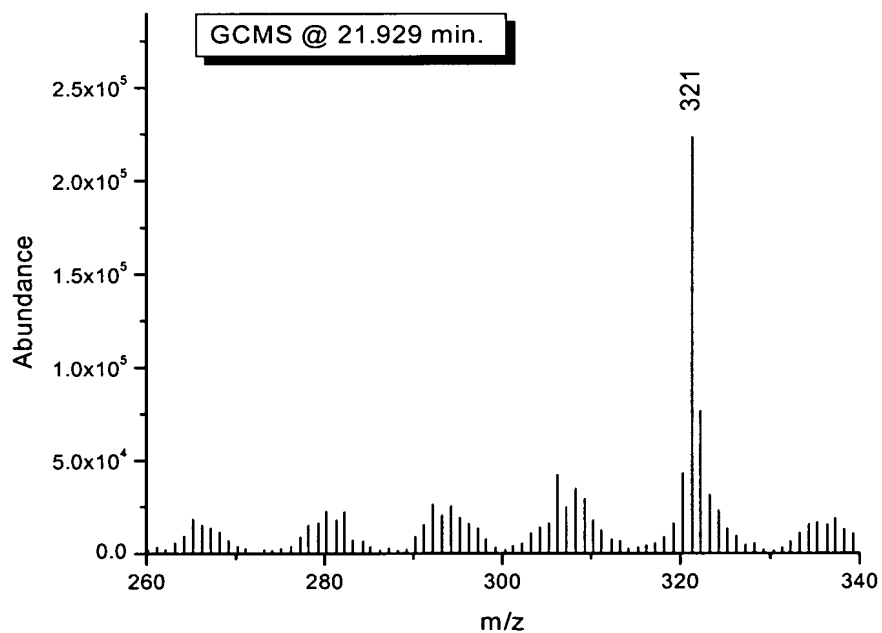
**FIG. 47**



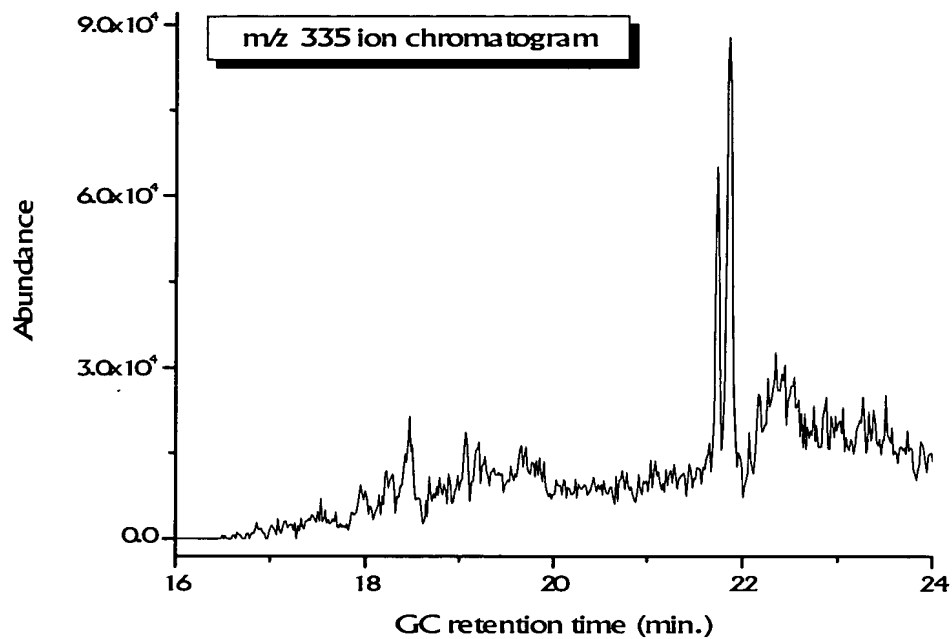
**FIG. 48**



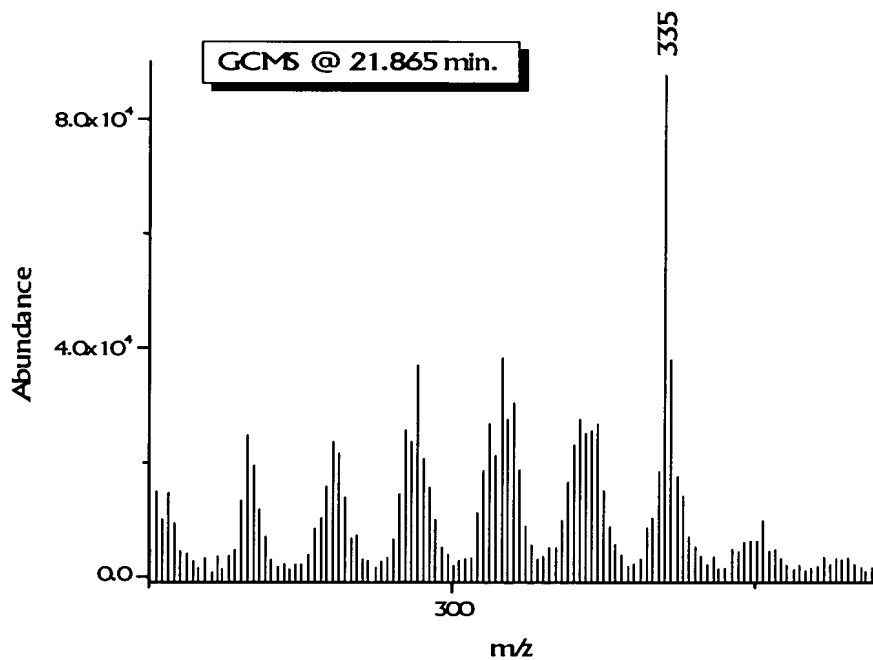
**FIG. 49**



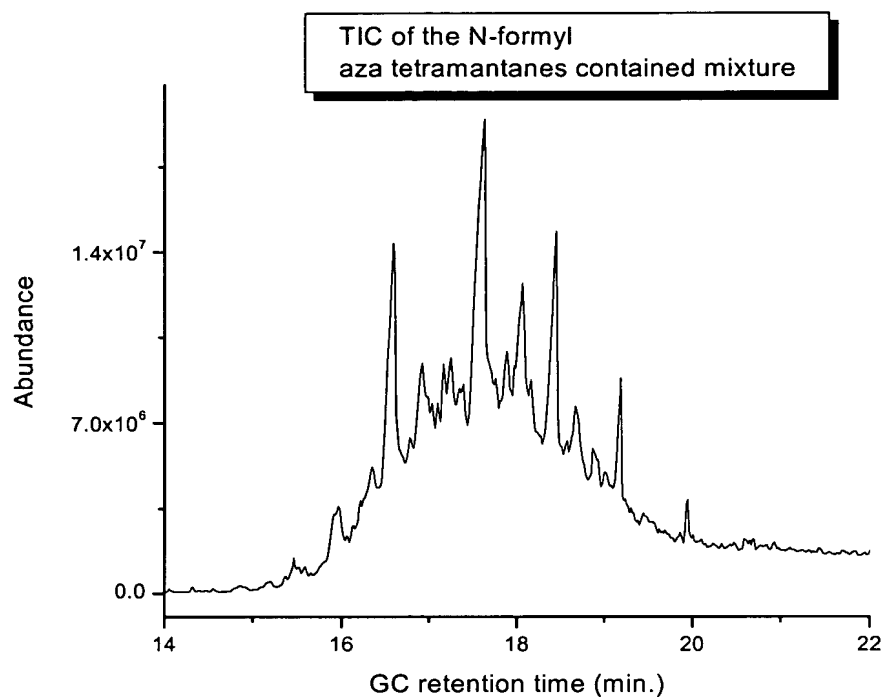
**FIG. 50**



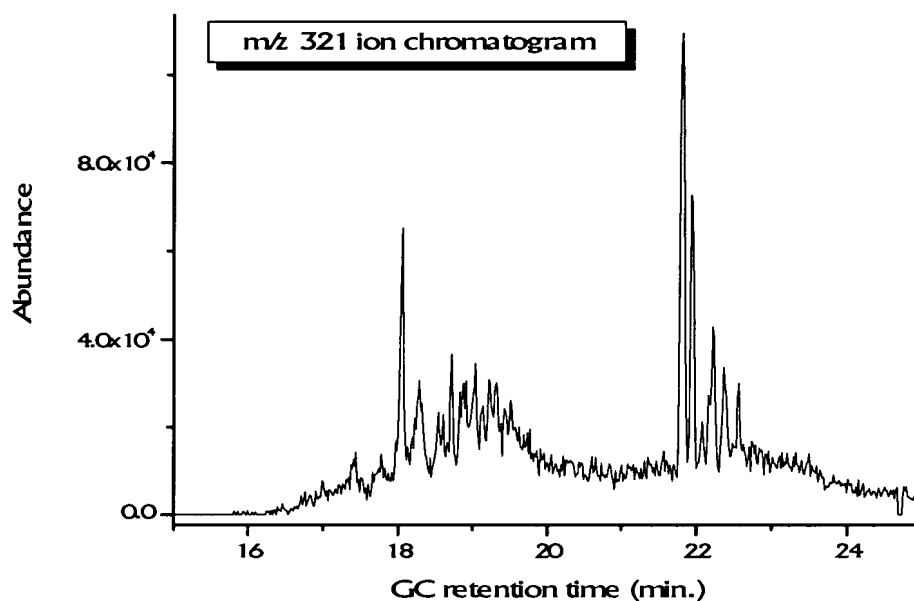
**FIG. 51**



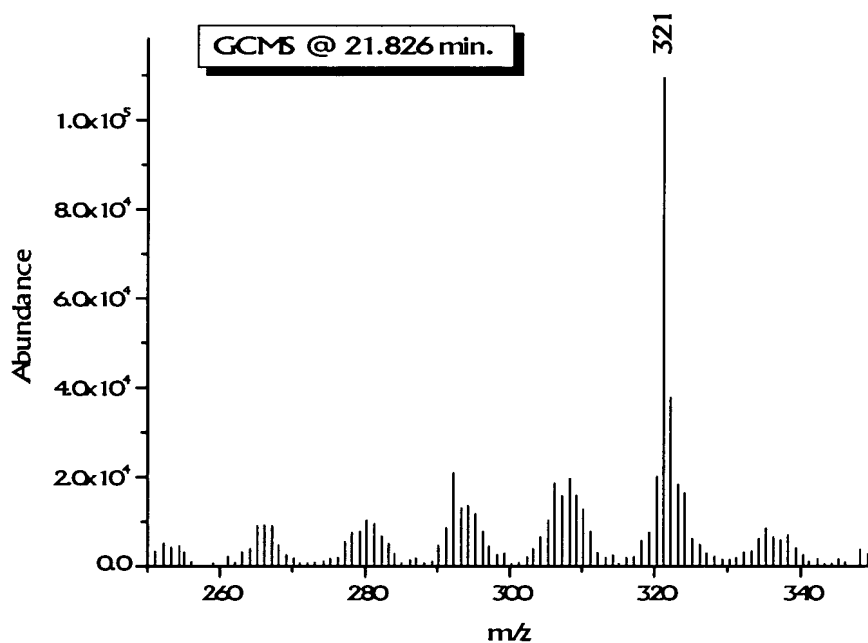
**FIG. 52**



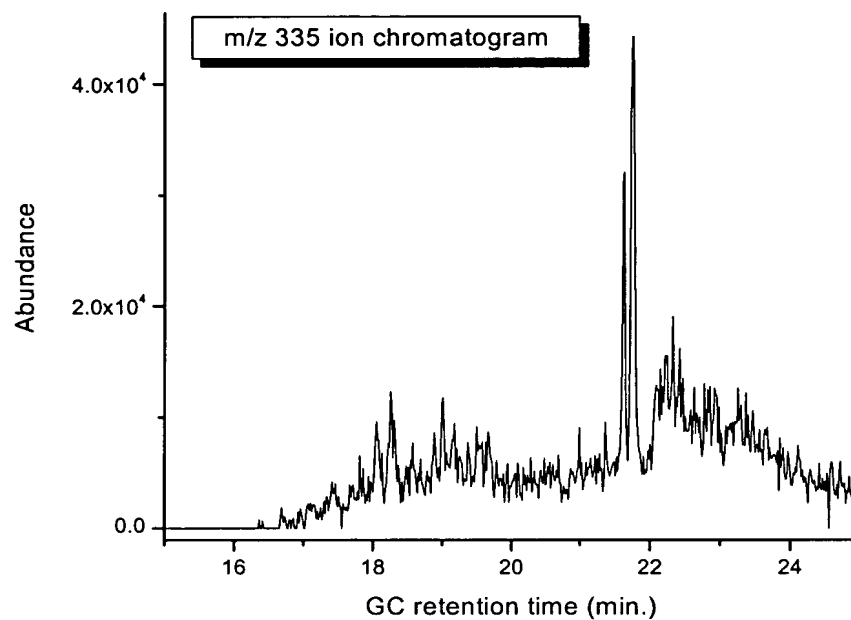
**FIG. 53**



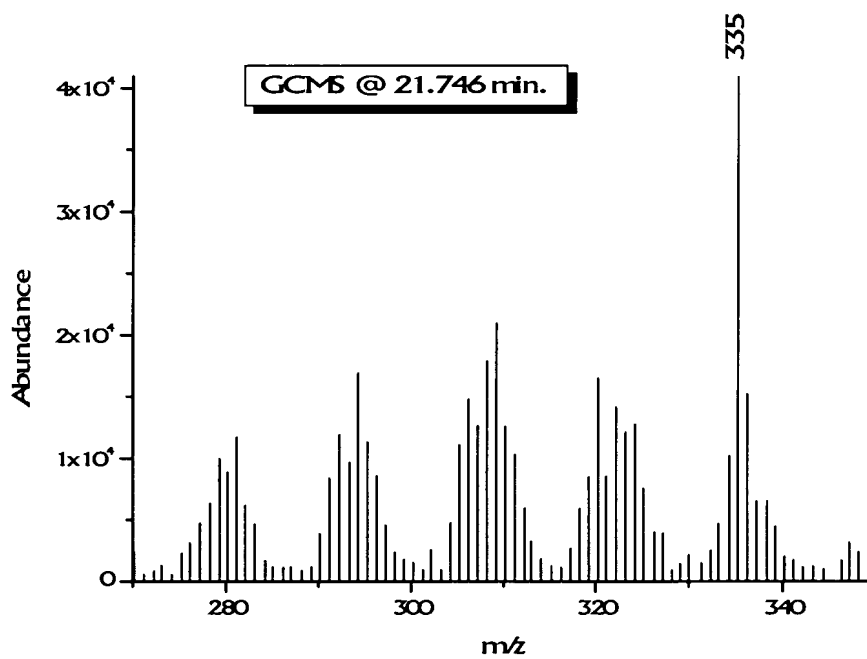
**FIG. 54**



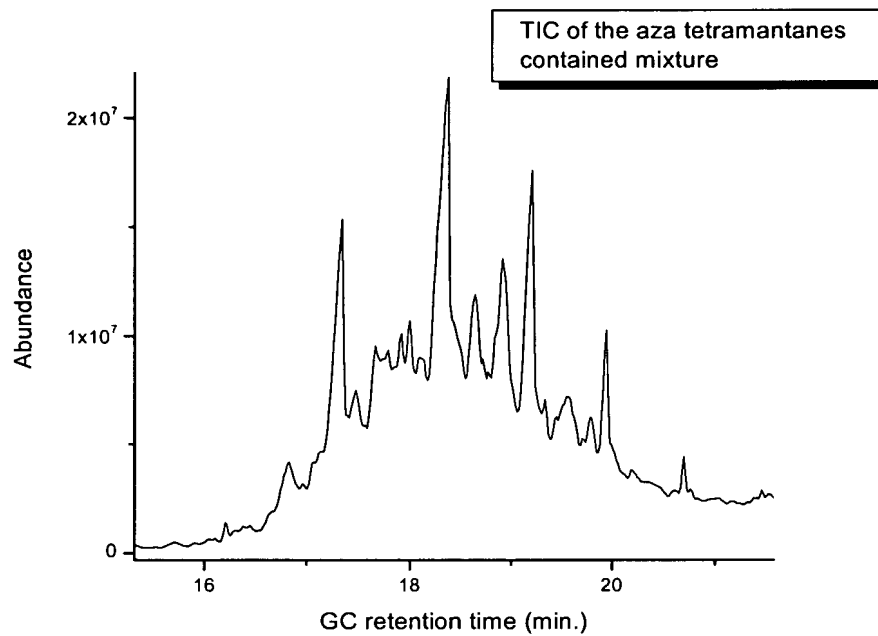
**FIG. 55**



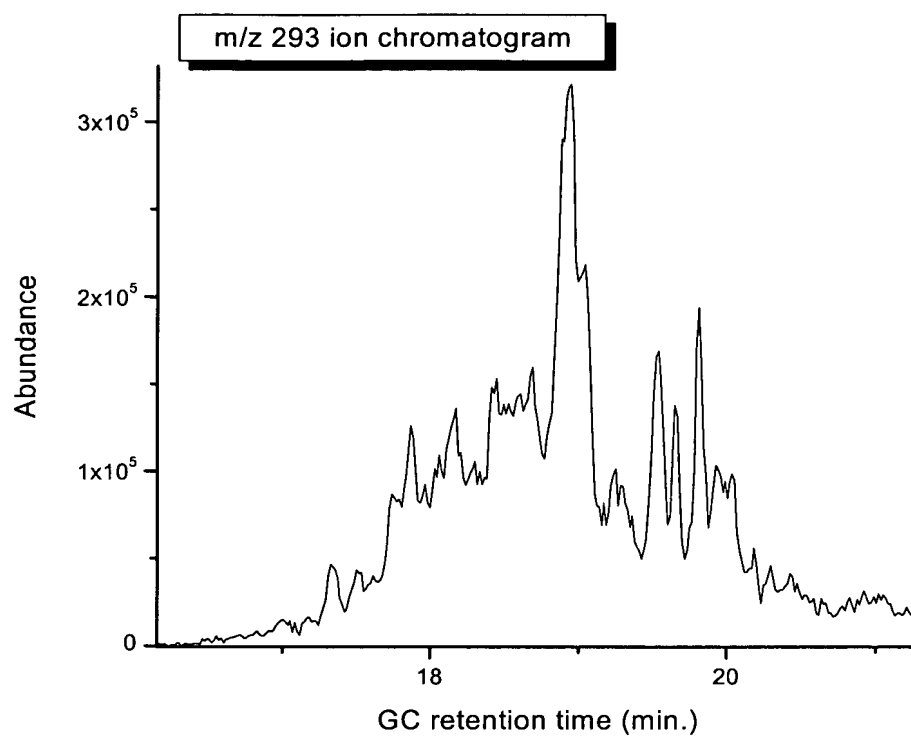
**FIG. 56**



**FIG. 57**

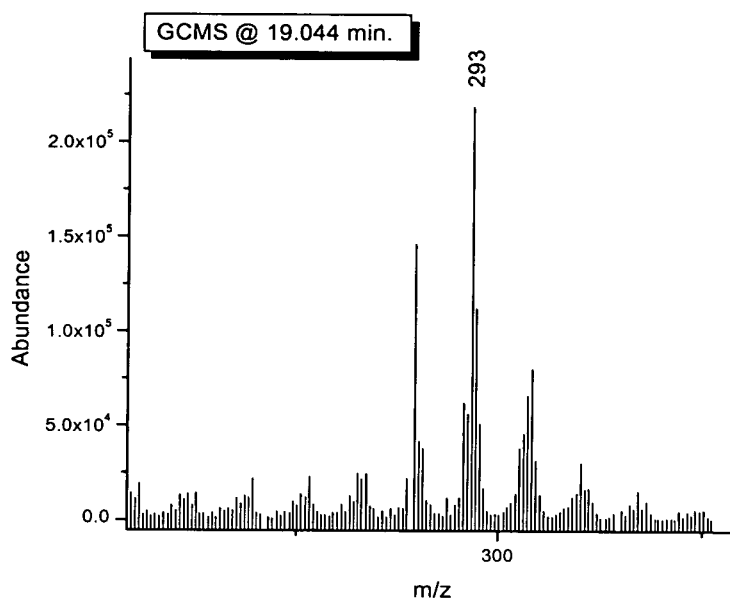


**FIG. 58**

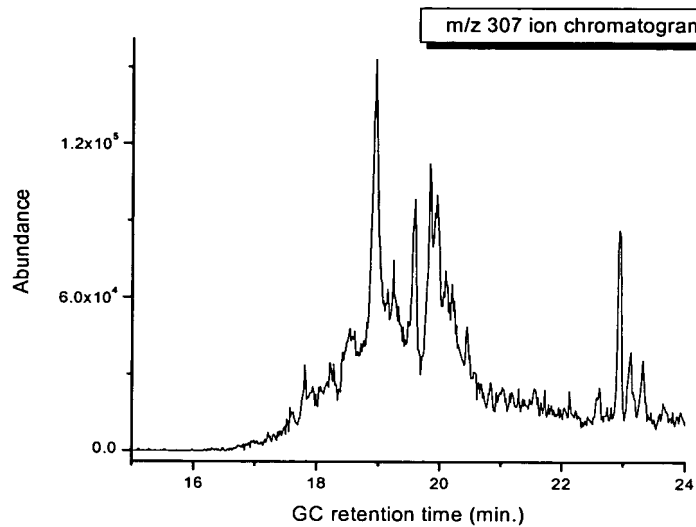




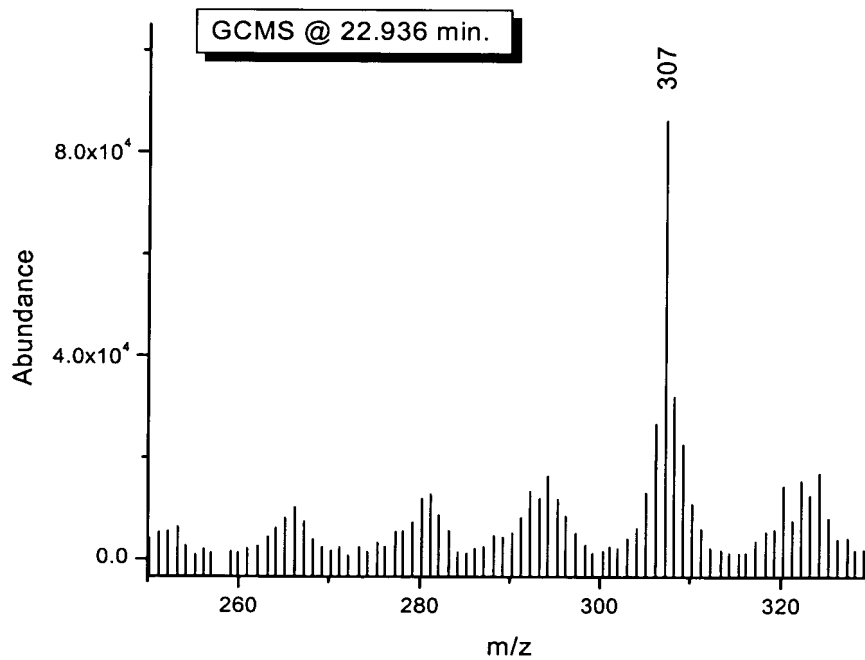
**FIG. 59**



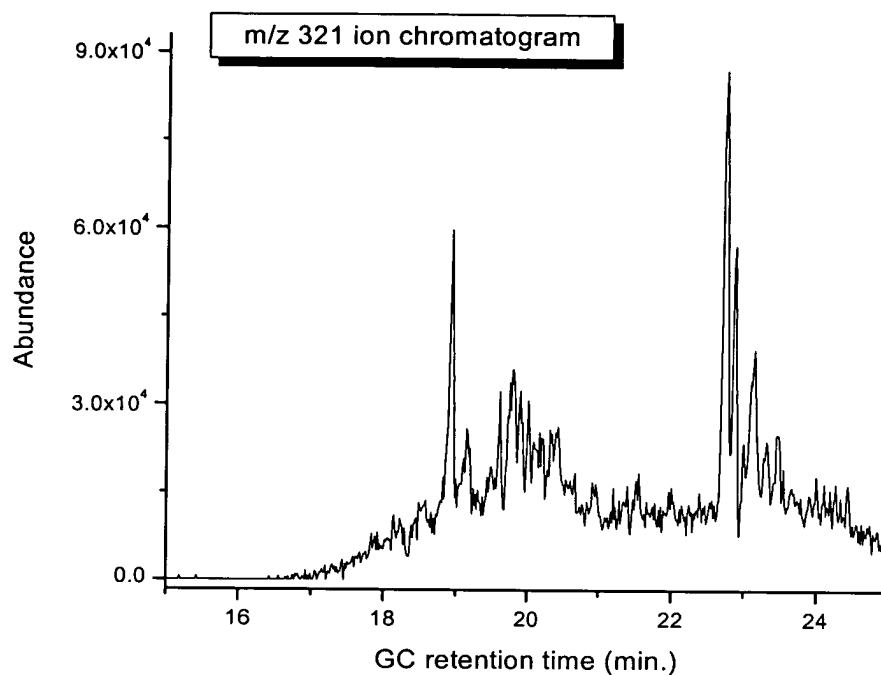
**FIG. 60**



**FIG. 61**



**FIG. 62**



**FIG. 63**

